NATIONAL ASSOCIATION OF STATE FIRE MARSHALS

Juvenile Firesetter Intervention Research Project

Final Report

03/30/2001

Phase I

JUVENILE
FIRESETTER
INTERVENTION PROJECT

**A Semi-Annual Report submitted to the
Department of Justice's
Office of Juvenile Justice and Delinquency Prevention**

by

**The National Association of State Fire Marshals
July 2000**

Table of Contents

MESSAGE FROM GEORGE A. MILLER, PRESIDENT

The National Association of State Fire Marshals (NASFM) is pleased to make available the results of its comprehensive research project on the issues and concerns surrounding the juvenile firesetter problem in America.

The fact that more than 50% of the persons arrested for the crime of arson in the United States in 1997 were juveniles is a serious enough indicator of the pervasiveness of the problem. But this statistic does not even include the far greater number of juvenile firesetting behaviors that never attain the status of criminal arson.

Pervasiveness is only one characteristic of the juvenile firesetting problem. Juvenile firesetting, both malicious and child fire play, is an incredibly destructive behavior. It accounts for more than 280 deaths and 2,400 injuries annually. In addition, the annual property loss, as well as the cost of providing protection from these fires, easily reaches more than $250 million. Juvenile firesetting accounts for more than 60% of the annual residential fires in some communities.

Solutions cannot become available until a problem has been recognized and defined. Within the fire service nationally, the recognition of juvenile firesetting as a problem is slowly emerging. But outside of the fire service, among mental health and social service providers, and even law enforcement, there is little acknowledgement that juvenile firesetting is even a problem, let alone how widespread and destructive it is. This is most true among the allied community agencies whose skills and resources must be enlisted to resolve the problem at the local level.

Of the many reasons that NASFM undertook this study of the juvenile firesetting problem, the most important was to promote an awareness and understanding of the scope and impact of the problem. NASFM's objective continues to be to raise the nation's awareness to the destructive nature of the problem. In this manner, we believe that the necessary resources will be secured to fully confront the problem of juvenile firesetting. In addition, this research clearly provides a reasonable path to follow, along with a list of items that must be addressed, in implementing successful intervention programs.

It is NASFM's on-going intention to continue to mobilize the local and national resources needed to support community efforts, which will prevent our youth from engaging in the destructive behavior of firesetting.

Introduction

In 1999, the National Association of State Fire Marshals (NASFM), with a grant from the Department of Justice's Office of Juvenile Justice and Delinquency Prevention, commissioned the first comprehensive group of studies on the problem of juvenile firesetters in the United States. The purpose of these studies was to serve as the basis of a strategic plan to better coordinate existing public and private resources needed to reduce the severity and incidence of fires started by children. To accomplish this, the "Juvenile Firesetter Intervention Project" was undertaken by an independent group of five (5) subcontractor teams who conducted studies on specific areas concerning the origin, identification, and handling of juvenile firesetters according to the guidelines established by NASFM.

The findings of existing data uncovered by these reports, as well as interpretation of the data and recommendations for further study and action, will be presented in this report. NASFM's analysis of these studies and a proposal of how to proceed to control and decrease the incidences of juvenile firesetting in the U.S. will also be included.

NASFM worked with a number of experts and practitioners involved in the juvenile fire setting field to develop questions, issues, and topics which needed examination to gain a complete understanding of the problem. From reviewing this input, seven distinct topic areas became evident, these being:

> Psychological Dimensions
> Sociological Dimensions
> Home Environment
> Social Services
> Product Safety
> Existing Firesetter Programs
> Law Enforcement

These seven topics were outlined in the original proposal submitted to the Justice Department. After the study teams submitted their initial reports, it became apparent that four of the topic areas could be combined into two. Psychological and Sociological Dimensions were joined into one report entitled Mental Health Intervention. Similarly, Home Environment and Social Services were combined into one study. This combining produced a more effective study, and resulted in less duplicated material.

For the past twenty years a number of isolated studies of various aspects of juvenile firesetting issues have been conducted by independent and dedicated researchers who recognized that a problem existed. In pursuit of a solution, many attempts have been made to probe the situation for causes and answers. Sometimes courses of action were implemented, but in others the study findings were not applied programmatically.

Further, prior studies typically examined aspects of the problem without consideration of all the components of the issue.

The NASFM "Juvenile Firesetter Intervention Project" is the first time that a comprehensive, nation-wide examination has been undertaken to examine all aspects of the juvenile firesetter problem — from familial, environmental and individual factors to how the legal and social welfare system addresses juvenile firesetting. This report examines what has been done, what has been effective, and ways in which remedial efforts could be more effective.

Each of the contracted teams conducted their reviews independent of one another and from NASFM. While each report covered a separate aspect of the juvenile firesetter problem, several commonalties emerged from the studies, which are discussed in the section entitled "Common Findings." It is that overlapping of needs, concerns and issues that NASFM has embraced and formulated into a plan for future action.

The facts uncovered in this examination are compelling. Among them is the realization that juveniles make up 51% of all reported arson arrests in the U.S., according to a 1997 Federal Bureau of Investigation report. Left untreated, many of these juveniles will continue to set fires throughout their adulthood. This problem will not disappear by itself and must be addressed with a determination to deter juvenile firesetters from harming themselves, their families and the community as a whole.

BACKGROUND

Each year, fires set by juveniles account for a large percentage of injuries, property damage and deaths in the United States. In fact, fires set by children and adolescents are more likely than any other household disaster to result in death. According to the National Fire Protection Association (NFPA) data for the Year 1996, children "playing" with fire started 87,330 fires that were reported to fire departments that year. As a result of those fires, an estimated 280 people died and another 2,400 persons were injured — often including the child, but more often younger siblings or playmates of the firesetter as, well as, innocent bystanders.

In 1997 alone 10,000 juveniles (children 17 and under) were arrested for arson, according to the FBI's Uniform Crime Report. This number only relates to *investigated* occurrences of juvenile arson. Often families and even law enforcement personnel themselves are reluctant to take action on what they think (or hope) is a one-time occurrence. Law enforcement personnel sometimes fail to report incidents as crimes, thus allowing the juvenile to avoid intervention and/or prosecution, and sometimes families simply ignore the seriousness of the activity and hide or neglect the activity. It has been speculated that many more juveniles than those reported are involved each year with firesetting activities — they just have not been identified as firesetters, or their firesetting has been ignored.

The umbrella of "juvenile firesetting" covers two types of children, those who intentionally set fires and those who are simply curious, just playing with fire that gets out of control. Fire interest by children, often accompanied by fireplay, is nearly universal. Over one-half of children report having played with fire by the time they leave elementary school ("Children and Fire," Cole, 1986). There is a tendency to dismiss the fireplaying child under the adage "kids will be kids," but in reality, playing with fire can be a deadly and costly activity. The statistics bear this out — child fireplay is the leading cause of fire deaths among preschoolers. In fact, children start almost 40% of fires that kill children 5 and under (Hall, 1999).

As the often-unchecked juvenile firesetter gets older, the fascination with fire does not diminish. Analysis of the 1995-97 National Fire Incident Reporting System (NFIRS) data indicates that the leading cause of fire deaths among children under the age of 13 continues to be playing with fire, most often with matches and lighters.

Because both parents and intervention officials often view curiosity about fire as normal, their methods for addressing the juvenile firesetter are not always consistent. Professionals agree that education about fire and fire safety is most certainly in order for the simply curious. The troubled intentional firesetter, however, needs more than just fire safety instruction. Professional intervention is often mandated for those juveniles with more serious psycho/social/emotional or physical needs.

Whether succumbing to curiosity in playing with fire or intentionally setting fires, these activities by children are never harmless and should always be taken seriously by adults. Unfortunately, this conflicts with an all-too-prevalent opinion by adults that they do not perceive themselves at risk for being involved in a fire (Operation Life Safety, 1998). Another study found adults also typically feel their children are most safe when they are at home (Peterson et al., 1993). This is in spite of the fact that most injuries and deaths occur in home fires (Hall, 1998). Inattention to the matter by adults can be deadly, for even children as young as 18 months have started extremely serious, devastating fires (Rochester Fire Department Investigation Report, Jan 1985-Dec 1993).

The failure of the community to recognize the seriousness of the problem stems in part from the fact that many fires never come to their attention. It is estimated that the 100,000 fires that the National Fire Incident Reporting System (NFIRS) data annually attributes to children is conservative. According to the ninth edition of <u>Fire in the United States</u>, published by the Federal Emergency Management Agency, U. S. Fire Administration, **the ratio of unreported fires to reported fires is about three to one.**

During the years 1992-96, the 100,000 fires annually set by children (whether intentional or not) cost an estimated $250 million in lost property (Hall, 1998). This number is increased when other costs are taken into consideration — lost wages, replacement costs of damaged property, taxes and even temporary housing costs. If the expense of responding to fires is added in at about $1,000 per incident, almost $100 million can be added to the expense resulting from fires set by juveniles (Rochester Fire Department [1999] Personal Communication).

Given the fact that juveniles account for 51% of all arson arrests, consideration must be given to the effort of handling and rehabilitating those identified by law enforcement as engaging in actual criminal activity. Such children must be addressed differently than the first-time "curiosity" firesetter. According to the 1997 FBI Uniform Crime report, 6.3% of those apprehended for arson activities were under age 10 and 37.5% were under 15. Of those adjudicated for arson, 27% were placed in residential treatment facilities; 59% were placed on probation; and 1% were transferred to adult court (Snyder, 1999). Thus, to the other costs of arson can be added the taxpayer cost of court time, incarceration and/or supervision over time.

In October 1998 the National Arson Forum, sponsored by the Insurance Committee for Arson Control, met in Washington, D.C., to review emerging trends in fire and arson investigation. This forum was attended by leaders of the fire service, law enforcement, and insurance industry arson investigation communities. Statistical research on juvenile firesetting was presented. According to the data, juvenile firesetting continues to be a leading cause of arson in America. Although the overall numbers of arson fires remain relatively constant, juvenile-set fires are a significant part of the overall fire problem. Discussed at this meeting was the opinion that efforts to deal with juvenile firesetters should be increased (Naylis, 1999).

The prevalence of juvenile-set fires in America warrants serious attention. It is with this impetus that the National Association of State Fire Marshals commissioned the five task force teams to examine the identified areas of concern and now submits their findings and recommendations for further action to help curb juvenile firesetting.

MENTAL HEALTH INTERVENTION

Juvenile firesetting is a poorly comprehended aspect of the mental health system. It is estimated that up to 20% of juveniles placed in residential treatment facilities have a history of firesetting behavior that is not being recognized. As a result of this limited awareness, few professionals in the field recognize the impact that juvenile firesetting has on the families they treat or the communities they serve. If a problem is not perceived or recognized, it is very difficult to attract any interest in additional training (Schwartzman, et al., 1999).

With this in mind, the expert team assigned to this area examined the awareness and training needs of mental health professionals who deal with the psychological and sociological dimensions of the juvenile firesetter. The team also examined the behavioral theories and individual characteristics of the juvenile firesetter, as well as the inter-relationships between service providers. The goal of this examination was to recommend actions that would broaden the availability of effective mental health intervention.

Types of Firesetters

Firesetters are typically characterized using the dynamic-behavioral theory, which is a broad-based conceptual framework designed specifically to explain firesetting behavior. This theory views firesetting as an interaction between: 1) dynamic historical factors that predispose the firesetter toward a variety of maladaptive and antisocial acts; 2) historical environmental factors that have taught and reinforced firesetting as acceptable; and 3) immediate environmental contingencies that encourage the firesetting behavior. The major contribution of applying this theory to describing the psychosocial characteristics of firesetting youngsters is that it allows for the organization and classification of characteristics that can be observed and measured to confirm or reject their hypothesized relationship to firesetting.

The model tries to define variables that predispose the firesetter towards anti-social acts. The observable variables usually fall under one or more of three classes of psychological determinants:

- **Personality or individual characteristics** (consisting of demographic, physical, emotional, motivational and psychiatric variables);

- **Family or social circumstances** (composed of family, peer and social influences);

- **Immediate environmental conditions** (in reference to events occurring immediately prior to, during and after firesetting).

These predisposing variables that interact to produce or increase the risk of firesetting are typically used to further identify the firesetter as either the non-pathological or the pathological firesetter.

Non-pathological firesetters, also referred to as the "Curiosity" type are children (usually between the ages of 5 and 10) who act primarily out of curiosity and do not understand the consequences of their behavior. Access to ignition materials, momentary lapses in supervision, the perception that they would not be disciplined if they were caught playing with fire, and premature exposure to and responsibility for activities involving fire are factors associated with curiosity fireplay.

While the non-pathological firesetter does not traditionally need mental health intervention and usually reacts favorably to fire safety education, the results of such firesetting can be potentially very dangerous and is a reason for concern. Every attempt should be made to provide intervention (i.e., education).

Pathological juvenile firesetters are more likely to exhibit aggressive behavior if no intervention is imposed. Several types of pathological firesetters have been identified:

- The **"Cry for Help Type"** includes children of all ages who consciously or subconsciously wish to bring attention to an intolerable life stress. This may be an intrapersonal dysfunction, such as depression or attention deficit/hyperactivity disorder. It could also be associated with an interpersonal dysfunction, such as family stress and dysfunction or stressful life events (e.g., separation, divorce, and remarriage). Recidivism with this type is frequently associated with physical and sexual abuse and chronic neglect. Although this type of firesetting is more likely to continue without intervention, there is good prognosis with treatment.

- The **"Delinquent Type"** refers to adolescents between the ages of 11 and 15. Their firesetting tends to be part of a larger constellation of conduct and aggression problems. An interest in vandalism and hate crimes, accompanied by little empathy for others and little conscience usually results in significant property damage.   Firesetting is more easily distinguished than the other personality and behavioral problems that usually accompany this behavior.

- The **"Severely Disturbed Type"** includes the paranoid and psychotic individuals who are controlled by sensory reinforcement (the sensory aspect of the fire is sufficiently reinforcing to cause fires to be frequently set) or self-harm motivations. Clinical experience shows that for this type there is usually a tendency to avoid harming others, unless the reinforcement control is powerful enough to allow significant harm to occur. Prognosis is guarded with this group, depending largely on the degree to which fire is a significant part of a delusion or the offender's intrapsychic life .

- The **"Cognitively Impaired Type,"** while tending to avoid intentional harm, this group (developmentally disabled and organically impaired types) lacks good judgment. Significant property damage is common. Prognostically, they are good therapy candidates. With this group, their cognition or ability to control impulses is significantly affected by their neurological or medical state.

- The **"Socio-cultural Type"** includes those arsonists that set fires primarily for the support they get for doing so by groups within their communities (e.g., the uncontrolled mass hysteria, the attention to cause, the religious and the satanic types). Most community-supported firesetters avoid harming others, but cause significant property loss. Those involved in uncontrolled mass violence frequently lose control and harm others, though initially the intent to do so may not be present. Most members of this group are amenable to treatment.

The manner in which the above variables (personality, family/social and environmental) interact defines the profile type to which the firesetter belongs. Understanding how the variables interact also allows mental health professionals to more easily predict fire-related dangerousness and to choose the more effective manner of intervention. If the underlying motivations or reinforcers are not specifically identified and treated, the pathological firesetter is likely to continue on a path of destructive behavior.

Factors Influencing the Juvenile Firesetter

The individual characteristics that influence juvenile firesetters have been identified as aggression, sensation seeking, social skill deficits, deviance and vandalism, covert antisocial behavior, and attention-seeking behavior. In addition to those personality traits, literature also reveals that the family and home environment are influences that affect a juvenile's repetition of firesetting, and are sometimes more important than individual characteristics (Kolko & Kazdin, 1985, 1986a, 1991). Key familial/home factors include:

- Poor supervision and a lax child-care environment;

- Inappropriate exposure to fire at an early age;

- Parental uninvolvement (often including abuse and neglect);

- Involvement in a dysfunctional family.

Outside factors also exert influence over the motivations of juvenile firesetters. Among the factors that motivate juveniles to return to firesetting are peer influence and stressful external events (combined with a lack of social skills). In combination, stressful

environmental circumstances, individual crises, and limited support at home are often the precursors to property damage through use of fire.

As the firesetter ages, changes in the methods and locations of firesetting are noted. For example, studies show that as children get older, their firesetting is directed away from their homes. As they branch out, such locations as neighborhood buildings, dumpsters, automobiles and schools are destroyed in the process (Schwartzman, Stambaugh & Kimball, 1994). An examination of the changes in firesetting behavior from childhood to adolescence is included in the team's report.

Treatments and Strategies

Most mental health professionals do not treat firesetting behavior. In fact, if a juvenile currently is being treated for other issues, the mental health care provider may not be aware of the firesetting behavior because the information was not offered or uncovered. Even in cases where the therapist is aware of the firesetting behavior, it is often not the focus of the treatment. Rather, it is assumed to be just another behavior in a constellation of many and, therefore, is not specifically addressed. If the overall treatment is to be successful, however, the firesetting behavior must be treated clinically in order for change to occur.

Family Assessment

Because firesetting is often enmeshed within a broad array of child and family problems, a comprehensive, structured interview needs to be conducted. Given the strong relationship between firesetting and family dysfunction, it is also recommended that a comprehensive family assessment be conducted. Careful attention to the antecedents of the fire, the fire itself, and the child's and parents' response to the fire are essential. Details describing the location of the fire, what was burned, who was there, the ignition source and how it was obtained will help to determine the primary motivation and future risk. This information must be considered by the mental health provider and incorporated into the treatment plan.

Partnering with Fire and Police

While mental health professionals are accustomed to working independently, it is imperative that a relationship be developed and maintained with the fire and police departments when working with juvenile firesetters. Both organizations are important sources of information to the mental health professional regarding the child, family, and the fire incident, as well as information regarding fire involvement and other risk behaviors not offered in the therapeutic setting.

In forming this partnership, it is recognized that the fire service is probably in the best position to administer a juvenile firesetter program locally. The fire service is also best suited for providing an initial assessment of fire setters and their families, who may need referral to mental health providers. A number of recognized assessment tools have been created specifically for use by the fire service to conduct this initial evaluation. The

assessment by the fire service is less technical than that used by mental health professionals, and are designed to be used in close proximity to the event.

Another important element of this partnering is the education of the mental health providers by the fire and law enforcement services. Many providers are unaware of the problem of juvenile firesetting, and the dangers it may pose. Mental health providers also need a working knowledge of fire safety, and an understanding of any criminal charges that may be related to the firesetting behavior. During interventions, mental health providers may be required to interact with the juvenile justice system in their community and the partnership can facilitate this interaction.

Partnering with Parents

In addition to partnership with mental health professionals, fire and police responders must also work with those who are responsible for the firesetter on a daily basis (i.e., parents). Regardless of the seriousness of the fire incident or motivation, fire safety education must be part of any intervention. Parents need to be included in this process with emphasis on safe storage of ignition materials, supervision of children, and the importance of not allowing use of fire before juveniles are truly capable of understanding the responsibility.

Partnering with the Community

One way to effectively reduce firesetting in a community is to have community organizations work together as a unit to create synergy around the problem. Involving such groups as insurance companies, schools, children's protective service agencies, and juvenile court systems to help generate more funding is part of the solution. Each group has a specific motivation for becoming involved — political, social/moral, marketing and personal reasons, which might induce them to join forces to curb juvenile firesetting. Some organizations can also be approached because their mission statement naturally aligns them with other groups that help juveniles.

Specific Types of Treatment

In families where juveniles turn to firesetting, there is usually a serious deficit in communication and problem-solving skills. Firesetting is an interaction of personality, social, and environmental factors. It is critical that the juvenile understands this interaction in order to recognize the circumstances and emotions that lead to firesetting, so that emotions, thoughts and behaviors can be redirected to healthier choices. Emphasis on teaching communication skills, aggression replacement training, anger management training and social skills building can be used to replace non-socially accepted behaviors that lead to firesetting.

Numerous treatment approaches exist to treat the juvenile firesetter (see Table 1). Using one such treatment, the Bumpass Graphing Technique, the juvenile uses a charting process to concretely visualize the events causing particular feelings leading up to

firesetting (Bumpass and colleagues, 1983). Juveniles are taught to recognize these triggering emotions early in the sequence so that they can interrupt the sequence of thoughts and choose more productive responses to difficult emotions. In a study of 29 patients treated with this method (ages 5 to 14), only two participants set subsequent fires.

Table 1

Techniques to Intervene with Juvenile Firesetters by System

Category I – Techniques to Control or Suppress Firesetting	
Bumpass Graphing Technique	Gardiner Storytelling Technique
Token Systems	Cognitive Techniques
Behavior Management	Relaxation Techniques
Role-play & Rehearsal	Hospitalization & Residential Care
Covert Sensitization	
Category II – Individual Treatment	
Empathy Training	Sex Abuse Treatment
Behavior Management	Substance Abuse Treatment
Assertiveness Training	Role-play and Rehearsal
Social Skills Training	Special Education
Depression Therapy	
Medication	
Category III – Family Issues Treatment	
Domestic Violence Treatment	Marital Therapy
Parenting Skills Training	Problem-solving
Behavior Management	
Substance Abuse Treatment	
Category IV – Community Issues	
Restitution	
Community Service	
Community Impact Statement	
Accountability	

Juveniles who resort to firesetting to bring attention to difficult situations often do so because they feel helpless and powerless. Very often, they simply can not think of anything else to do. Problem-solving techniques and assertiveness training have proved to be helpful in these cases. For example, one program (which falls under the Problem-

solving section of Category III - Family Issues Treatment in Table 1) uses a seven-step problem-solving technique (Ritchey & Janekowski, 1989). The steps are: 1) define the problem, 2) brainstorm possible solutions or alternatives, 3) evaluate the solutions or alternatives, 4) select a solution, 5) plan the implementation, 6) try it and then 7) evaluate the effectiveness of the plan. Families are taught to follow each step and are provided practice in working out problems together.

Awareness and Training Needs of Mental Health Professionals

There is little, if any, training on the causes or developmental nature of firesetting behaviors. To assess the level of awareness of the juvenile firesetter problem among mental health professionals, the team polled 300 randomly selected psychotherapists. The survey measured knowledge of juvenile firesetter issues, experience with juvenile firesetter clients, training received, and interest in training. It also queried where psychotherapists typically go for information on treatment issues. Only 5% of those sampled indicated that there was ever any discussion of juvenile firesetting during their coursework. Due to this lack of specialized training, only a limited number of professionals in mental health are equipped to treat juvenile firesetters. The results further demonstrated:

- Poor awareness of juvenile firesetting behavior;

- Low interest in the issue (reflective of poor awareness of the magnitude of the problem);

- Lack of knowledge of treatment modalities;

- Acknowledgment that existing information and references in their libraries may be outdated;

- Lack of knowledge of the current literature and available resources;

- Willingness to attend training opportunities, if available. (Few indicated any knowledge of such opportunities in their area.).

Juvenile firesetting is a poorly comprehended mental health problem. As a result of limited awareness and understanding of the problem, few professionals in the field recognize the impact that juvenile firesetting has on the families they treat or the communities they serve. If a problem is not perceived or recognized, it is very difficult to attract any interest in additional training. The expert study team recommends the following for disseminating information and training to mental health professionals:

- Establish a formal linkage with a national psychotherapy association to establish a committee to oversee development of training courses;

- Explore critical partnerships with national organizations to support training development;

- Provide university-based and on-line educational programs for mental health professionals;

- Target newspapers and magazines with an aggressive awareness campaign regarding issues and service difficulties

- Write a series of informational articles based on treatment methods and interface with fire service for professional journals and publications.

Funding Mental Health Treatment

The mental health aspect of firesetter programs have proven repeatedly to be valuable to the benefit of the juvenile, the family involved, and the community as a whole. Historically, these programs have been funded through insurance, Medicaid and state and local funding sources. However, available funds, rather than the needs of the child and caregivers, often determine the length of mental health intervention. For example, too often private insurers limit payment to only a portion of the treatment (for example, only 50%) and the caregivers are forced to cease treatment mid-stream due to the financial burden. For these reasons, alternative funding sources should be made available so that counseling can be obtained on the basis of need, not the ability to pay.

Other resources that may be considered in order to provide affordable counseling are:

- Counseling services that are available in every community and may be obtained free of charge;

- Counselors in elementary schools who are already familiar with child issues and may serve as effective interventionists between families and fire professionals;

- Clergy who have received training in counseling as part of their schooling and may serve as effective interventionists between families and fire professionals;

- Existing public mental health systems that can be utilized;

- University systems that train counselors, psychologists, or sociologists who can be accessed to assist with helping juvenile firesetters;

- Mental health professionals who do pro-bono work in their communities

- Mental health professionals who utilize a sliding fee scale;

- Universities who are seeking placements for interns and residents. They may be placed in fire departments or in mental health organizations for the specific purpose of working with juvenile firesetters.

Summary

Providing mental health treatment for firesetters and their families is necessary and valuable to the community. Children identified as at risk for repeating firesetting behavior should be referred to mental health professionals as a result of their involvement in juvenile firesetter intervention programs, juvenile and criminal justice agencies, schools, child protective and family advocacy agencies. To ensure that these juveniles are properly served, several changes are needed: 1) increased interaction and cooperation between mental health professionals, fire and police; 2) formal training of mental health providers, fire and police; and 3) increased funding to agencies who service the juvenile firesetters and their families.

National Association of State Fire Marshals

HOME ENVIRONMENT DIMENSIONS
&
SOCIAL SERVICE RESOURCES

Fireproof Children Company assembled an expert panel to address the issues of home environment dimensions as they relate to juvenile firesetters. They also studied the capability of social service resources to administer aid when needed in intervening with juvenile firesetters.

Agencies that have the expertise and resources to support children and families were examined with a view towards how they could be expanded to address juvenile firesetters. The team also compiled a list of social service resources that need to be added to reduce juvenile firesetting behavior.

The team obtained national statistics, local and regional existing data, relevant scientific literature and published reports of various community service programs. They also obtained information from the City of Rochester, NY, Fire Department, and a report summarizing data obtained from Portland, OR, and Anchorage, AK. Finally, they interviewed fire and childcare officials chosen to represent diverse areas of the country.

HOME ENVIRONMENT DIMENSIONS

Children, primarily elementary school children, are responsible for a surprisingly large number of fires, approximately 100,000 every year. Most of these fires are started by children free of psychopathology, exhibiting no conduct problems and living in primarily functional families (Fineman, 1980; Gaynor & Hatcher, 1986; Gaynor, 1991). However, it has been found that most of these children have a limited understanding of fire and ignition materials. They also have easy access to these materials, frequent exposure to and responsibility for activities involving fire (most frequently cooking), and no explicit family rules about use of fire or fireplay (Grolnick et al., 1990). It has also been found that parents often intervene when their child sets a fire, handling the situation privately. Thus, a large number of these children never come to the attention of the fire service (or any other community service).

There is considerable variability within the group of children who are involved in fireplay or firesetting. Some of the circumstances that contribute to their behavior are lax supervision, access to ignition materials and activities associated with their particular age levels. Figure 1 illustrates the age distribution of the 1,445 fires set by children and reported to the Rochester Fire Department in the nine-year period beginning January 1985 and ending December 1993. The children were surprisingly young, with the median age being 7. More fires were started by 4-year-olds than any other age group and over 50% of the fires were started by children ages 4 through 9. This is consistent with data reported by Portland Fire & Rescue Services and the Anchorage Fire Department.
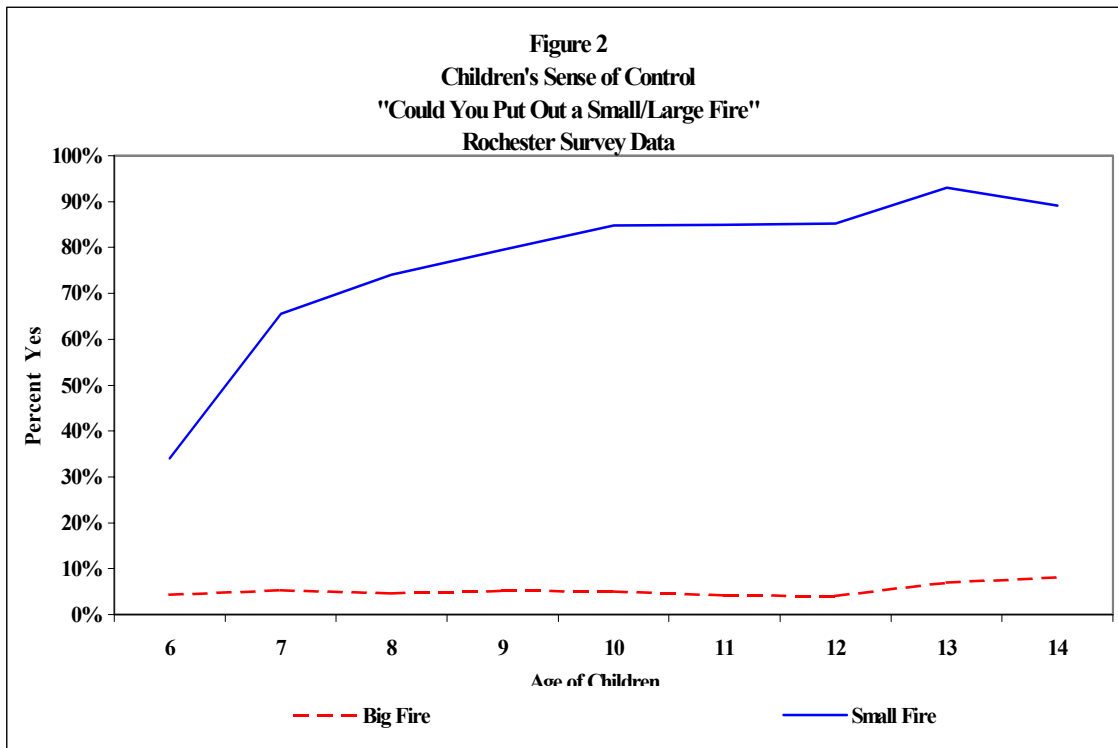
Figure 1
Fires Started by Children
Rochester Fire Department 1985 - 1993
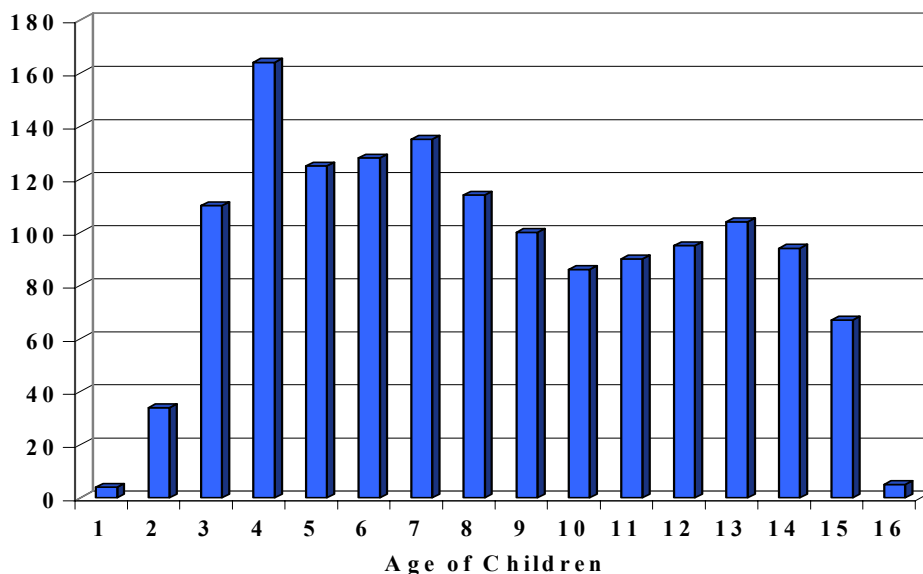
While most fires are started out-of-doors, 22% of child fires are started in the home. These fires command our attention because they account for virtually all of the injuries (89.6%) and deaths (98.1%) that result (Hall, 1998). These fires also account for the vast majority of structural damages that result from juvenile firesetting. Home fires originate where children spend most of their time (in the bedroom and other play areas). The first items ignited are found in those rooms — bedding, clothing, furniture and toys.

Research suggests that parents believe children are safest in the home. As a result of this perception, it is in the home where supervision is most relaxed. Not only is supervision lax, but parents also tend to be overly casual about fire safety issues in the home (Grolnick, 1990).

Indicative of this, some parents may leave matches lying around in easily accessible places. Children tend to start fires with common, widely available and easily accessible ignition materials — mostly matches or lighters. While very few children below the age of 10 are permitted to use matches or lighters, a substantial number are permitted to light candles and cook by themselves. It has been documented that when young children are given responsibilities for activities involving fire, they have an increased sense of control over it, which often leads them to increased fireplay (Grolnick, 1990)(see Figure 2).

National Association of State Fire Marshals

Figure 2
Children's Sense of Control
"Could You Put Out a Small/Large Fire"
**Rochester Survey Data**

The level of awareness and concern among parents and children must be raised as to the risks that exist in the very environment in which they feel most comfortable — the home. Parents must be educated to store ignition materials in safe places and present only model fire-safe behavior to their children. In accordance with this recommendation, parenting guidelines about fire safety are in order. The strategies and resources to accomplish this are discussed in the study group report.

The Presence of Hazards and Access to Ignition Materials

Fires started by children are almost always started with matches and lighters. The Rochester Fire Department has compiled a collection of data to show the relationship between proportions of fires started by matches and lighters and age (see Figure 3).

According to the Rochester report, 65% of juveniles who started fires had constant and immediate access to ignition materials. Frequently, matches and lighters were left out on coffee tables and kitchen counters. When they were "put away", they were typically kept in an accessible kitchen drawer. Fewer than 20% of the children had to make an effort to obtain ignition materials.

Figure 3
Fires Started by Matches and Lighters
**Rochester Fire Department 1985 - 1993**
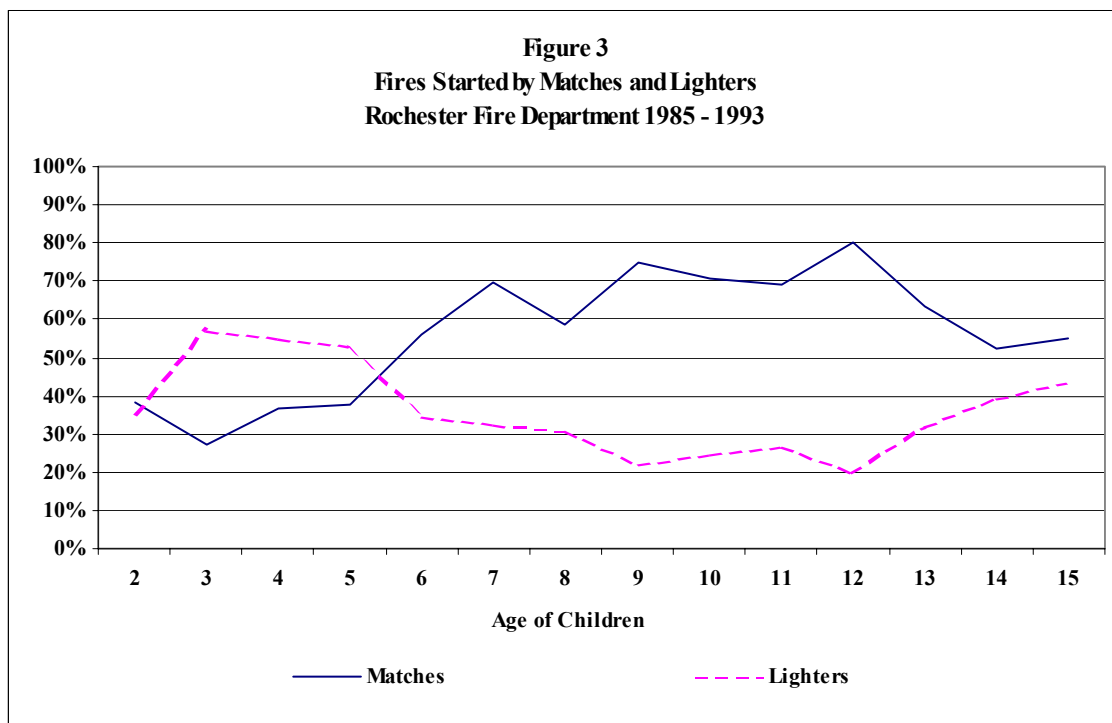
In Portland, 80% of the children reported they had found or had been given the ignition materials by a parent or other child. Only 13% said they had to search out or "sneak" the materials (Porth, 1999). Clearly, access to ignition materials is a major contributing factor in fires started by children, but it is especially relevant in fires started by young children (mainly those under 7 years of age). Information from Rochester supports the theory that increased access to ignition materials results in increased likelihood of fireplay (see Figure 4).

Playing with fire is somewhat different than playing with other potentially hazardous tools like guns and knives. Fire is animate and reactive to the slightest movements of air. It changes colors. It grows. From a child's viewpoint, fire is a very rewarding plaything. Children do not become bored with fire. As their familiarity and perceived control increases, so do the incidents of fireplay and the opportunities for danger.

When it comes to children's ability to handle emergencies, many parents overestimate their children's cognitive powers. Preschool children, for example, have no understanding of the transformations of matter and energy. They have, at best, a very limited understanding of cause and effect; they can not understand how a single match could possible become a house fire.

Upon reaching elementary school age, however, children begin to understand both cause and effect transformations. At this age they can be educated and most are able to

National Association of State Fire Marshals

Figure 4
Children's Access to Ignition Materials and Their History of Fireplay
Rochester Survey Data
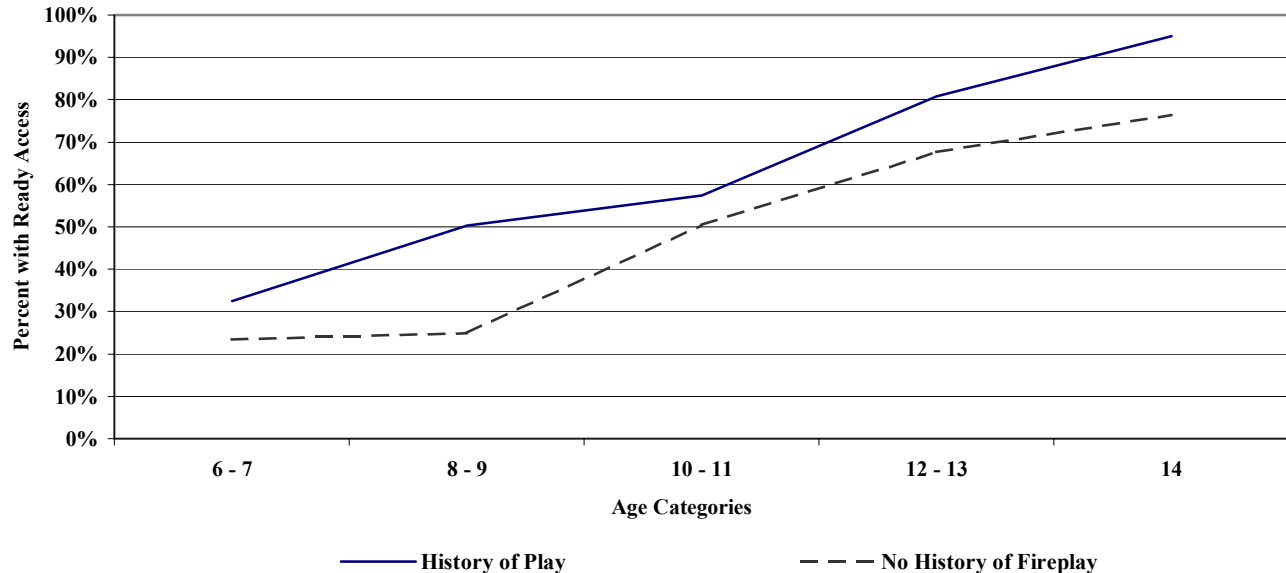
follow directions. With good instruction and an opportunity to practice, they can remember and imitate the required actions correctly. At this stage, however, they still can not envision all of the future possible outcomes of an action (Piaget & Inhelder, 1969). Only during adolescence do children begin to develop skills to properly anticipate all possible outcomes of an action, prepare for and quickly respond to unforeseen events.

Social Services Resources

The most appropriate and cost-effective method for dealing with a juvenile's first exposure to firesetting (in the absence of other worrisome behaviors) is attendance with his/her family at a fire-safety skills program. Any fire-safety program should focus first on prevention of injury through improved child and parental knowledge about fire safety and, second, on developing supervision practices tailored to the child's developmental needs and abilities.

Juveniles with more entrenched or malicious patterns of fire involvement require more intensive intervention. Research indicates that this type of firesetting often occurs in the context of child or family mental health problems. One-third of the fires started by children in two cities with carefully collected incident data (Rochester, NY, and Portland, OR) were judged by the investigator to have been influenced by something other than curiosity and to have at least one serious family problem (Cole et al., 1986).

Other studies found disturbing causes that resulted in firesetting:

- Stressful life events such as death, separation, divorce, family illness, frequent moves and unemployment (Fineman, 1980; Kolko & Kazdin, 1990; Jacobson, 1985; Showers & Pickrell, 1985; Gruber et al., 1981);

- Parents who are mentally ill, depressed, lacking in affection or psychologically unavailable (Macht & Macht, 1968);

- Lack of social skills on the part of the juvenile, accompanied by conduct problems (15% of juveniles starting fires in Rochester had also already been in trouble with the police)(Cole et al., 1999).

Current research from patterns found in Rochester and Portland reveals that recidivism is much higher for children living in difficult family situations. Programs designed for such families have reported some success. For example, for the five-year period in Rochester (1983-87) during which every family judged to be in need of services was referred to either a social service or mental health agency, repeat firesetting was reduced 74%. Once this program ended, recidivism increased again (Cole et al., 1999).

Without addressing the mental health needs of both the child and the family, the child will remain at high risk for future episodes of firesetting. Unfortunately, children and their families are not always placed in corrective situations.

Essential Components of a Comprehensive Intervention Program

Children's fireplay and firesetting has such a community impact that an overall effort should be made to reduce high risk and aggressive behaviors and promote positive youth development. The range of social factors directly affecting the motivations of the juvenile firesetter indicates that a cooperative effort of services is needed to address a wide range of child and family problems.

Regardless of the agencies involved, if a community is to effectively detect, intervene in and ultimately prevent juvenile firesetting, several functions must be fulfilled:

- **Identification and referral** of children who play with or deliberately set fires;

- **Assessment** of fire involvement, child and family strengths and weaknesses;

- **Safety education** presented to parents and children;

- **Intervention and support** for child/family;

- **Out-of-home placement** available if necessary;

- **Training** for community agencies in juvenile fireplay and firesetting;

- **Coordination** of community services.

Social Services Community Support

There are numerous community groups whose efforts could be directed towards the juvenile firesetter problem. The expert team examined the potential impact that each group could have on ameliorating the problem of juvenile firesetters and provided descriptions of programs within existing groups that could be tailored to firesetting issues. This information will be useful in establishing model programs. The groups identified were:

- Teachers, educators, and daycare providers are in a special position to educate children and their families about fire safety. In addition, they can help identify and refer children involved in fireplay and firesetting.

- Parent groups such as the PTA, neighborhood associations, and civic groups provide a forum through which communities can educate parents about fire safety, behavior management of their children, and the problems of fireplay and firesetting.

- Youth programs and organizations such as Boy Scouts, Big Brothers Big Sisters, can influence children and adolescents. Responsible behavior by the majority will encourage similar behavior by others. Also, the adults who work with these groups are able to influence their attitudes for the use of fire for inappropriate ends such as seeking attention.

- Community based organizations, such as the American Red Cross, and YMCA foster youth development by providing youth constructive activities in the non-school hours.

- Physicians and health providers are a respected source of information and advice for parents, and they give advice keyed to the children's age and level of development. With proper interviewing, they are also able to identify children who might be engaged in firesetting, and refer the child and family for further evaluation and intervention.

- Mental health professionals can provide assessment and diagnosis, tailor interventions to particular children and families, and address a wide range of family problems. They can also provide training to other community organizations that have the opportunity to work with children, to recognize and refer children who are in need of services.

- Social service agencies such as child welfare services, and child protective services, can provide caseworkers to interact with individual families. Further, they can mandate services for children and families, and insist that families participate or risk having the children removed from the home.

- Law Enforcement agencies are frequently the first agencies to identify fireplay and firesetting. During their investigations of set fires, they uncover a great deal of information about a child and the family, and this information is critical for making a rapid and appropriate referral.

Approaches to Organizing Community Agency Efforts

To address the problem of juvenile firesetters, new government agencies with specialized skills are not necessarily needed. Rather, existing resources need to be adapted and refocused to address the problem. The major failure of many communities is that they do not offer any services to the juvenile firesetter and his/her family — primarily due to the failure of agencies to work together. Too many agencies try to fit children into existing categorical programs. When a child or family does not match the criteria for an existing program, the agency may not be aware of alternative treatment programs and, therefore, no referral to another agency is suggested.

Often many services have no outreach component. If a family will not, or can not, come to the agency office, they receive no services, nor is there follow up after a family stops coming.

A coordinated approach that tailors services to individual families ensures that they will receive the services they need. "A very strong case can be made for multi-component programs that address broad objectives. Categorical programs that focus on only one behavior are important, but unless they are linked together into a more rational approach to reach young people, they will continue to have limited effects" (Dryfoos, 1990).

Community Models

Different types of models are being used by some communities to coordinate services. The following are three types of approaches:

A. Single Agency Leadership

A single, respected agency committing its resources to address juvenile firesetting provides clear direction and an established structure within which to accomplish the task. Although other agencies are invited to participate, it is the single organization that takes responsibility for the overall success or failure of the program and holds others accountable for their contributions. Overall management is more easily accomplished as the single agency can provide staff, arrange meetings, etc.

Investing leadership in a single organization, however, leaves the community dependent upon the continuing commitment of that organization. Changes in leadership or priorities can cause the community program to suffer. In addition, if the single agency assumes too strong a role in the project, the other participating agencies may curtail their involvement, thus defeating the intent of developing a comprehensive intervention program.

B. Community Task Force Cooperation

Creating a community task force may provide more stability, a more balanced perspective of the problem, and a greater knowledge of community resources than can be mobilized by a single agency. This type of organization may allow for a greater diversity of approaches to the problem and less disruption caused by management changes by virtue of the fact that several agencies share the responsibility for the organization.

In contrast to the single agency leadership model, the initial progress of a program directed by a task force will necessarily be slower. First, the task force will need to develop a leadership structure and negotiate a set of priorities. Since there is no staff in the task force structure, necessary tasks will often fall on a dedicated few who may tire of the unequal workload and cease to volunteer. Completion of tasks may also be difficult to mandate when no one agency has overseeing responsibility to make sure a job is done.

C. A Third Alternative - Combination of A and B

A third approach combines the inclusiveness of the task force with the infrastructure of the lead agency model. A coalition of agencies, in this case, take on the role as the catalyst for community action by securing funding to hire an executive director and a small staff to administer the program.

The task force sets up the organization, but does not shoulder responsibility for the organization's actual operation. The presence of a staff provides continuity and support for administrative tasks, while each task force agency member stays involved with clearly defined (and perhaps limited) responsibilities.

Each agency continues to work independently, but is involved in a joint communication with other agencies through this newly formed organization. The result is a greater understanding by the individual agencies of the whole problem and a familiarity with resources to draw from when dealing with firesetting juveniles and their families who are in need of assistance. One major drawback to this model is that major support would be needed, either from contributions by the agencies themselves or a campaign to secure outside funding.

Summary

The results of examining the home environment and social services resources led to two areas of action being suggested by the study team:

Home Environment

The level of awareness and concern must be heightened for parents and children to recognize the risks that exist in the very environment in which they feel most comfortable — the home. Parents must be encouraged to safely store ignition materials and to model fire-safe behavior for their children. They should also be encouraged to improve their supervision over their children and make age-appropriate assignments in allowing children to handle fire-related materials.

Social Services Resources

Fire safety education must be available to all firesetting juveniles and their families. For children who are free of other worrisome behaviors and whose firesetting is not done with intent of damaging property or injuring anyone, a family centered educational intervention should be sufficient.

For those children with more entrenched or malicious patterns of fire involvement, fire safety education should be provided, but education alone is not enough. More intensive individualized intervention is recommended for them and their families.

Offering social services to families will only be effectively accomplished if there is cooperation among agencies to identify, mobilize and integrate effective programs to treat and rehabilitate juvenile firesetters. The challenge will be to educate communities, agencies, and individuals about the problem of juvenile firesetting, the enormous costs associated with it, and the benefits of a multi-agency collaborative approach to dealing with juvenile firesetting.

Report on Campaign Messages, Themes and Existing Intervention Programs for Juvenile Firesetters

The expert team assembled by the Sleep Products Safety Council (SPSC) examined and analyzed existing messages and communications techniques that target the problem of juvenile firesetting. The task they undertook was to determine the most effective communication themes and activities for use in future fire prevention public education programs.

The team conducted focus groups to analyze the fire safety themes and messages that are currently being directed at juveniles. In addition, they analyzed intervention programs that are now in place in several cities across the nation to determine how successful they were in meeting their goals.

Focus Group Findings

Working with Ogilvy Public Relations Worldwide and RIVA Qualitative Market Research, the study team conducted six focus groups to study the impact of various themes and messages concerning fire safety directed at children and their families. Six focus groups, composed of parents, adolescents, fire service personnel, and caregivers (i.e., teachers and daycare providers) were conducted in Baltimore and Chicago. Themes and messages of national fire safety programs administered by insurance companies, the National Fire Protection Association (NFPA), the National Safe Kids Campaign and the United States Fire Administration (USFA) were tested.

Eight key topic areas were presented to the groups to ascertain their beliefs, attitudes and perceptions. Attention was paid to which messages were noticed first; which were understood; and which were most apt to be incorporated into fire-safe behavior. The key topic areas discussed in the groups were:

1. Knowledge of Bedroom Fire Safety

Most respondents cited practical steps for maintaining bedroom fire safety and expressed concern for children and other family members, friends, neighbors and pets. This was especially true of parents with young children. The most frequently cited important fire safety measures were having a smoke detector in proper working order, having an escape plan and conducting fire drills. Members of the fire services were especially concerned with the need to educate children not to hide during a fire and not to fear uniformed fire fighters.

2. Concerns About Fire Safety

The fire fighters' concerns for educating small children was echoed by parents' concerns that their children know how to react in the event of a fire. Additionally, while not everyone knew that the bedroom was the site of the majority of fires juvenile-set

fires, or that the more deadly fires occur during the night, most did recognize potential hazards that could make the bedroom dangerous (e.g., many respondents expressed the fear of sleeping through a fire). Finally, some adolescents and fire safety personnel were concerned that schools may not have adequately prepared students for surviving a fire.

3. Current Messages and Materials About Fire Safety

In general, this discussion confirmed that many fire safety messages are reaching the public, particularly children. Most parents believed that children learn about fire safety at school and through visits to fire stations. In addition, most believed that the public receives a lot of useful information about fire safety through the media, though several believed media coverage could be exploitative or misleading. Respondents reported that children take seriously the information they receive.

4. Messages About Bedroom Fire Safety

The focus groups identified which messages resonated best with each of the audiences. Overall, the messages that were perceived to be the most effective were those that: 1) assigned responsibility for fire safety; 2) provided practical advice on how to prevent fires; and 3) instructed how to react during a fire. Parents preferred messages that emphasized the importance of parental responsibility and the need for smoke detectors. Adolescents preferred the messages that spelled out the consequences of fires/firesetting (e.g., loss of life, property, and parental respect) and showed strong support for practical solutions, such as having an escape plan. Fire services personnel preferred messages that teach children not to hide. Fire services personnel also highly approved of messages stressing the need for community involvement in prevention and intervention strategies. Caregivers, like parents, also preferred messages that reminded them of their responsibility — in this case, as educators.

5. Textual Themes

In response to textual themes presented to them, focus groups preferred those that were straightforward and that referred to bedroom fires. "Learn Not to Burn" and "Wake up to Fire Safety" were almost universally accepted by all groups. These messages were perceived to be direct, relevant and, especially in the case of "Learn Not to Burn," easy to remember. Other messages elicited mixed responses or were perceived as effective by some groups, but not others. For example, many parents and adolescents liked "Don't Fool with Fire" and "Too Smart to Start Fires" because of their responsibility message and appeal to children, yet caregivers and fire services personnel were less favorably disposed.

In terms of bedroom fire safety, the groups ranked their favorite themes during a written exercise. The top three themes were: 1) "Time to Stop Fires Where You Sleep;" 2) "Don't Fool with Fire: Smart Kids for Bedroom Fire Safety;" and 3) "Too Smart to Start Fires: Smart Kids for Bedroom Fire Safety."

6. Graphical Treatments

Group members responded to several preliminary and "full blown" graphical treatments for five themes. Of these, two were given an overall positive reception by all groups. The graphical treatment for "Don't Fool with Fire" was well received because it was perceived as colorful and noticeable. In addition, many liked the tie-in between the use of a jester's hat and the message itself. The groups also responded to the graphical treatment for "Time to Stop Fires Where You Sleep" because of the detail in the depiction of a child's room and the symbolic use of an alarm clock.

7. Impressions of a Hangtag

Overall, respondents believed that the international "No" symbol hangtag conveyed the message of not playing with matches or fire. They also volunteered that they would expect to see it "everywhere" including in schools, on stoves, on doorknobs, in the kitchen and in daycare and community buildings. However, many thought it would be less effective on mattresses since it would not be visible.

8. Recommendations From the Focus Groups

When asked to make recommendations for avoiding bedroom fires, the respondents focused on preventative measures and pre-planning. The adolescent groups stressed the importance of not being careless in the bedroom, while the adults recommended escape plans, keeping matches away from children, maintaining working smoke detectors, knowing how to act when encountering smoke, and knowing emergency numbers. Fire safety professionals stressed a comprehensive approach that included all of the measures.

Analysis of Four Model Programs

The study team undertook a comprehensive examination of the messages and themes, as well as other factors that would likely contribute to the success of future intervention programs. These factors were: 1) the assessment model used; 2) a template that could be adopted by existing programs; 3) the assessment methodology used by program managers to determine local program effectiveness; and 4) an evaluation of the interaction and coordination between the courts, social service agencies and correctional authorities to devise and implement intervention programs. Based on geographic diversity and a proven success at reducing the prevalence of juvenile firesetting in their local areas, four model intervention programs (from a group of 20) were chosen. Those selected were Columbus, OH; Phoenix, AZ; Portland, OR; and Rochester, NY.

In identifying the common, positive elements of the four programs, the analysis looked at the institutional basis of the program, the program messages, partners, age of target audience and campaign elements and materials used. Figure 1 identifies the four assessment models used in this case study analysis and each model's use of the elements identified as necessary for a successful intervention program.

Campaign Comparison Chart

PROGRAM	BASIS		MESSAGES		PARTNERS					AGE				CAMPAIGN MATERIAL		CAMPAIGN ELEMENTS					
	Community-based	Institutional	Consequence	Informational	Law Enforcement	Education/School	Fire Service	Community Organizations	Private Companies	Under 5	5-9	10-14	15-19	Print	Video	Education	Prevention	Parent Interview	Child Interview	Counsel Referral	Follow-up
Columbus, OH	✓		✓	✓		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	
Phoenix, AZ		✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓			✓	✓	✓	✓	✓	
Portland, OR	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
Rochester, NY		✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓			✓	✓	✓	✓	✓	✓

Figure 1

Analysis Findings

While the detailed approaches of all four programs were somewhat different, the overall program designs had much in common. In terms of the success of the program, the important factor seemed to be that all incorporated partnerships with other organizations. Some were more inclusive than others. It did not seem to matter whether the program was administered from a community or an institutional basis.

All four programs elicited a high level of cooperation between schools and fire services. Law enforcement and, to a lesser extent, community organizations were involved. It would appear that incorporation of the private sector has gone largely unexplored.

Each of the models delivered their messages to the same age groups (toddlers to adolescents) with a two-fold approach. First, children were taught ways to prevent fires and promote fire safety; second, the consequences their firesetting behavior could have on themselves and others was explained both visually and verbally.

Both parent and child interviews and post-interview counseling referrals were included in all four programs. Because of their greater use of social services, Phoenix and Rochester appeared to be the stronger programs. These two programs applied existing fire-prevention methods to education and counseling sessions. This appeared to be successful as it promoted a stronger understanding of fire handling and the avoidance of problems with fire. In addition, bringing parents into the education process proved to be beneficial.

A comprehensive referral system based on cooperation of many community groups, agencies (including law enforcement and fire services), schools, and parents, contributed greatly to making each of the four programs successful. The network of referrals also allowed for identification of potential firesetters who showed tendencies toward such behavior and gave them the possibility of intervening before they acted in a dangerous way. As a result, the programs in each city were able to identify not only those with a history of firesetting, but also those who had been exposed to firesetting activities by others.

Programs that emphasized "in-depth" counseling and follow-up proved more successful than those that did not. Intense counseling and follow-up allowed counselors to determine more appropriate courses of action for individual cases, rather than having the juvenile firesetter treated in general terms.

Each of the programs was successful because they incorporated both comprehensive and flexible tools in reaching the ages they targeted. Campaign materials such as promotional videos and print materials were not as important to the success of the program as campaign elements (the actual interaction with client/s). Although Phoenix and Rochester did not use campaign materials, of the four programs, the programs of both cities appeared stronger anecdotally. In terms of actual data, they show declines in

juvenile firesetting more than the cities that used such tools as videos and brochures. It appears that what is important is the actual message conveyed, educational and counseling services provided, ages targeted, and the level of partnership involvement.

Counseling and follow-up referral proved to be more successful when working in conjunction with behavior modification techniques. Applying these techniques allowed counselors to work more "in-depth" with adolescents. They were more able to accurately determine appropriate courses of action for individual cases, rather than dealing in more general terms.

Summary

The focus group research primarily provided a measure of which messages and themes were most effective at cutting through the clutter of media bombardment to reach the targeted adolescent audience. They not only determined which messages caught the juvenile's attention, but which ones actually affected this group's behaviors.

In examining the chosen model city intervention programs, all four were determined to be successful templates for future firesetting prevention programs.   Each city reinforced the educational and counseling activities with follow-up activities.   All could be successfully duplicated with modification by other cities if the developed programs were flexible, incorporated behavior modification, and were tailored to fit the needs of the community.

In designing the model, regional characteristics and the behavioral differences of the juveniles must be taken into consideration. Each community should attempt to incorporate a full range of program components (education and counseling). They should also attempt to attract as many partners and community agencies as possible to become involved.

The findings from both the focus group data and information from the model program descriptions suggest elements for establishing a successful juvenile firesetting intervention program. To accomplish the greatest success, future programs should include:

- Messages that convey both consequential themes and practical information;

- Themes and graphics that tie visuals to the message;

- Visuals to enhance memorization of messages;

- Programs that are flexible and comprehensive;

- Participation that includes parents, community groups, agencies, and schools in both education and counseling;

- Interaction between juveniles, adults/caretakers and educators;

- Personalized counseling which allows individuals to see more clearly the negative effects of firesetting while accepting better fire prevention techniques.

PRODUCT SAFETY ISSUES

"Out of sight, out of mind" is a simple solution that often solves simple problems. In attempting to prevent fires being set by very young children, this will sometimes work. Such preventative actions as putting matches in locked drawers will deter even a determined curious child. But what if the item, such as a stove, can not be removed or put away? Now, the problem becomes much more complicated. What can be done to reduce the potential that the unsupervised child will be able to operate the ignition source and potentially cause a dangerous situation to occur? And how far do we want to go in making these products fire-resistant? Even if some items can be made fully child/fire-resistant, what would it cost?

With these questions in mind and to round out a comprehensive study of key topics concerning the deterrence of juvenile firesetters, an independent study of fire-related products was undertaken by a team of product safety experts under the direction of the TriData Corporation of Arlington, Virginia.

The expert team, through its technical approach, set out to: 1) determine the materials and products most commonly used by juvenile firesetters; 2) investigate fire hazards as identified by the Consumer Product Safety Commission (CPSC), looking at both ignition sources and flammable items; 3) research current and proposed product enhancements; and 4) propose possible additional enhancements and product strategies for the future.

Existing Product Safety Enhancements

Matches are the primary sources of ignition for children playing with fires, according to data by the United States Fire Administration (NFIRS, 1995-1997). Years ago, most matches could be ignited anywhere where friction could be created — from the surface of the street to the soles of shoes. This feature was later recognized as a fire hazard. Today most matches will light only when coming in contact with the striking surface of the matchbook.

Other products have been enhanced over time to prevent or minimize juvenile-set fires. Most obvious in the marketplace are cigarette lighters — the 2nd most-used ignition source by children (NFIRS, 1995-97) — which today feature child-resistant mechanisms. Though easy to disengage for the average adult, these features have been designed to deter children under the age of 5 from playing with cigarette lighters.

Household appliances have also undergone changes to reduce the occasion for juvenile involvement. Older gas stoves featured knobs that were located at eye level and within easy reach of small children. Through observation and modeling, young children learned how to manipulate stove knobs. In doing so they then subjected themselves to two hazards of gas stoves. First, if the pilot light flame was on, the stove could become lit, and the open flame used as an ignition source. Second, if the pilot light happened to

be out, and the child tried to turn on the stove, a build-up of natural gas could potentially lead to a devastating explosion. Today's stoves, however, are manufactured with the controls on the countertop, out of view and out of reach of younger children. Many of these controls, in addition, require the user to push and turn a knob to ignite the pilot light in order to turn on the stove.

Portable space heaters have also been redesigned to reduce hazardous possibilities. These portable heat sources emit an abundant amount of heat, often enough to ignite combustible products that come in close contact with them. Regulations designed to reduce this require thermostats with an automatic cutoff when the unit reaches a certain temperature. They also are required to have a tip-over shutdown feature, which automatically turns the unit off should it be knocked over.

Clearly, advancements have made some products safer for children. In reality, science has come so far that in some cases it is possible to create products that are fire-resistant. This, of course, is advantageous if we are considering such items as children's bedclothes. But in some other products is the trade-off between ease-of-use and fire safety feasible ... or even advantageous? The study team sought to address product safety issues such as these while at the same time placing emphasis on product safety enhancements that can be effective in reducing the incidence of juvenile firesetting.

Study of Materials and Products Used by Firesetters

This study mainly concentrated on those products used and attractive to children under age 13 in both curiosity driven and intentional firesetting activities. To provide a reasonably comprehensive overview of the materials and products commonly used by juvenile firesetters, the study team:

- First **analyzed National Fire Incident Reporting System (NFIRS) data** to establish the overall range of materials that were used to ignite fires; what items were ignited; and whether/what equipment, if any, was involved in the fire;

- Performed a limited **review of juvenile firesetting literature** and product safety literature to find products identified in juvenile-set fires;

- **Interviewed individuals who deal with juvenile firesetters** in some professional capacity (i.e., psychologists, public fire educators, juvenile intervention specialists, fire investigators, and the like).

The team felt that all three of the sources were necessary to investigate the topic since objective data does not always convey the nuances of a situation and subjective data (the interviews) may only reflect a portion of the overall picture.

NFIRS Data Review

Since NFIRS 's data on arson fires did not allow for extrapolation of data pertaining to juvenile factors, the team focused this study on the more inclusive NFIRS data on children playing with fires that was available. Efforts were taken to concentrate this study on juveniles, under age 13, who set fires either through curiosity, unintentionally, or without full understanding of the potentially devastating consequences.

The NFIRS data points to matches as the leading ignition source for all fires set by children playing with fire whether they are outside or inside the home (see **Ignition Source for Children Playing Fires**, Table 1). Lighters are the second most common ignition source. In residential fires, it is interesting to notice that lighters (34.3%) and matches (39.5%) are almost equally used to set fires. For all fires in general, however, matches are used more than twice as much as lighters.

Table 1: Ignition Source for Children Playing Fires
(Form of Heat of Ignition, NFIRS, 1995-1997)

RANK	ALL FIRES			RESIDENTIAL FIRES		
	Form of Heat of Ignition	Count	Percent of Incidents	Form of Heat of Ignition	Count	Percent of Incidents
1	Match	24,591	50.1	Match	9,416	39.5
2	Lighter	11,723	23.9	Lighter	8,187	34.3
3	Fireworks	4,115	8.4	Fireworks	1,056	4.4
4	Candles	1,116	2.3	Candles	1,006	4.2
5	Other Open Flame	1,112	2.3	Other Open Flame	575	2.4
6	Cigarette	891	1.8	Heat From Properly Operating Electrical Equipment	485	2.0
7	Open Fire	707	1.4	Heat From Gas Fueled Equipment	445	1.9
8	Other Smoking Material	575	1.2	Cigarette	384	1.6
9	Other Open Flame	531	1.1	Open Fire	267	1.1
10	Heat From Properly Operating Electrical Equipment	511	1.0	Other Open Flame	258	1.1

In examining **Object Ignited by Children Playing Fires** (Table 2), it is interesting to note that the three types of materials that children choose to set on fire, whether inside the home or out, are: grasses/brush; bedroom items and rubbish/trash. In the home, mattresses and bedding are ignited almost equally and are involved in over one-fourth of the children playing fire incidents. This supports data from other commissioned NASFM reports, which cite the bedroom as the place where most firesetters start fires in the home.

Table 2: Object Ignited in Children Playing Fires
(Form of Material Ignited, NFIRS, 1995-1997)

RANK	ALL FIRES			RESIDENTIAL FIRES		
	Form of Material Ignited	Count	Percent of Incidents	Form of Material Ignited	Count	Percent of Incidents
1	Forest, brush, grass	16,311	32.2	Mattress, pillow	3,314	13.8
2	Rubbish, trash	8,162	16.1	Bedding, blanket, comforter, sheet	3,280	13.7
3	Mattress, pillow	3,646	7.2	Forest, brush, grass	2,536	10.6
4	Bedding, blanket, comforter, sheet	3,401	6.7	Rubbish, trash	2,177	9.1
5	Wearing apparel not on a person	2,231	4.4	Wearing apparel not on a person	2,046	8.5
6	Upholstered furniture	1,965	3.9	Upholstered furniture	1,409	5.9
7	Magazine, newspaper, writing paper	1,710	3.4	Magazine, newspaper, writing paper	1,103	4.6
8	Structural member	913	1.8	Curtain, blind, drapery , tapestry	579	2.4
9	Box, carton, bag	702	1.4	Floor covering, surface	501	2.1
10	Fuel	671	1.3	Structural member	474	2.0

Literature Review

In general, articles, technical reports and case studies reviewed by the study team supported the information found in NFIRS data. Matches and lighters were the resources most commonly used to ignite fires. The materials that are ignited range from trash and brush to mattresses, bedding and furniture.

Technical articles were more substantive in quantifying the items used in fireplay. They also supported the other data that matches and lighters were the main source of

National Association of State Fire Marshals

ignition. Items typically ignited, according to these sources, were paper, clothing, bedding (including mattresses), furniture and leaves/brush.

Interviews

Interviews with professionals who work with juvenile firesetters were used to gather information from hands-on experience and to enhance the statistical data collected on firesetters. Representatives included those from fire service, investigation/Fire Marshal offices, fire prevention, firesetter programs, youth counseling, child/adolescent psychology services, fire intervention direct services, and policy/research (only burn professionals were unavailable). Interviewees were questioned on the following topics:

- **Ignition Source.** The interviewees consistently noted that for children ages 5 to 12 the ignition sources were nearly always matches and lighters. There was disagreement on which of these two items was most prevalent, but most agreed that design changes to both lighters and matches were necessary.

- **Accessibility.** All interviewees noted that accessibility was a key factor influencing the choice of ignition sources. Matches and lighters were available for all ages of children in the home, as well as from counters at drug and convenience stores for older children. Some interviewees mentioned regulating access to lighters and matches as is done for such items as tobacco.

- **Supervision.** Accessibility and supervision seemed to go hand in hand, according to the interviewees. Nearly all the respondents indicated that the fireplay incidents occurred during periods of minimal parental supervision.

- **Items Ignited.** Many interviewees noted that in starting fires children usually choose what is available — twigs, leaves and papers when outdoors and bedding, mattresses, carpeting, or furniture in the room where most fires took place, the bedroom. Two professionals responded that in their experience paper was most apt to be the first item ignited by the firesetter, even fires involving bedding and furniture were the result of out-of-control paper fires. (This was in conflict with the NFIRS data, which one of the interviewees also noted.)

- **Relationship Between Age and Products.** There was no consensus on this question. Many interviewees saw this relationship as an accessibility issue — a child will explore with what is available. Age and maturity, most agreed, are not necessarily related when considering the actions of children. Some 7-year-olds can be very sophisticated, while some 12-year-olds can act very immaturely.

- Most respondents agreed that **childproofing** is not "fool proof" and that child-resistant features are most often viewed by children as a *challenge* to

overcome. In addition, there was concern about making adult-use products so child-resistant that they were difficult for the adults themselves to use.

Current Product Safety Enhancements

A wide variety of products have been (or are being) modified or improved to make them fire-safe or fire-resistant. Most of these improvements have not been specifically directed to the juvenile firesetter, but they have nevertheless had a beneficial effect.

Using the results from the analyses performed on the NFIRS data and the results of discussions with involved professionals, the team chose products to examine that fall into three categories: Ignition Sources, Item(s) Ignited, and Protection Devices. Table 3, lists the items that have been improved or are presently being enhanced for fire safety (a detailed examination of these items is contained in the study report):

Table 3: Products Modified for Fire Safety

(Form of Heat of Ignition)	Fuels (Form of Material Ignited)	Protective Devices
Matches Lighters Fireworks Candles Cigarettes Heaters/Heating Equipment Stoves Lamps	Mattresses/Bedding Blankets Apparel Children's Sleepwear Upholstered Furniture Carpets/Rugs Gasoline Containers	Portable Fire Extinguishers Smoke Alarms Residential sprinklers

Overview of Potential Product Safety Enhancements and Strategies

After reviewing all research materials obtained, interviews conducted, and study team discussions held, the team next compiled a list of products that they suggest should be addressed in terms of enhancements and/or strategies to promote for the future.

The first overall goal should be to make matches and lighters more difficult to operate and obtain; the second, to make as many items as possible flame-resistant. As was mentioned earlier, implementing these changes brings with it several challenges. The first is to insure that changes made to enhance the childproof fire safety aspect of their use do not inflict a detrimental effect on the normal adult use of the product. A simple solution could be to allow non-child-resistant products to be purchased by households without children. The second, and most obvious challenge, is to overcome the technical problems inherent with adding these enhancements to some products. Some

enhancements are simply not technically feasible or cost-efficient. With that in mind, the team offers for consideration the following changes to products as possible deterrents to juvenile firesetting.

Proposed Enhancements - Products and Strategies

Matches

- Significantly reduce flame duration. One attractive aspect of matches is watching the flame dance down the match stem. Significantly reducing the flame duration may reduce a child's interest in lighting the match. Only 3 to 5 seconds of flame duration is needed for lighting cigarettes, gas appliances, and fireplace fires. The concept is to either impregnate the match stem with a fire retardant or otherwise modify the stem material. These products supposedly are available but perhaps not widely distributed.

- Manufacture matches that take two steps to light. A two-step process requires both dexterity and extra time. This concept prevents the quick lighting that may be attractive to children. The matches can either have a coating that must be removed before striking (requiring two separate actions) or the match head requires a separate catalyst or other component added (rubbed onto) before striking.

- Produce match "sticks" (like disposable hand warmers) that must be bent in a certain way to blend materials, which will ignite a small, short duration flame.

- Develop a "flame-resistant" match that must be held in a certain position to produce a feeble flame. The technical literature suggests two variations on this concept. The first concept requires that the match stem material be somewhat flame-resistant to produce a feeble flame. The match would need to be held inverted to prolong the life of the flame by increasing the amount of fuel available. When dropped or held incorrectly, the flame would extinguish. This concept was successfully manufactured some time ago. It is unknown whether this product is still available. The second concept is to modify the match head and stem material to burn at a lower temperature. This would inhibit ignition of non-ordinary combustible materials (i.e., plastic toys or treated upholstery) by the flame of the match head but would allow ignition of smoking materials.

- Separate the striker physically from the matchbook or matchbox.

- Coat match heads with hygroscopic material (if left out they would absorb water and become unusable).

- Modify the match stem material to produce a less stiff match which requires more dexterity to light.

Lighters

- Insure that child-resistant protections can not be disabled (as is presently being done by some purchasers and vendors). The current standard could be amended to require a non-disabling provision.

- Ban all novelty lighters (even child-resistant ones) because of their enticement to children. (The team acknowledges that some suggestions, although they would have a positive effect, would not be acceptable.)

- Enlarge the size of lighters to fit only adult hands. (Larger size may also allow for improved configuration to separate the location of the spark wheel from the gas control lever. Enlarged size also allows ability to re-configure to avoid a "pistol-shaped" look.)

- Add a simultaneous operation feature, which would require the operator to hold down a lever or push a button while simultaneously operating the spark wheel.

- Incorporate sequential actions that must be performed in the proper order and time sequences for lighter to start.

- Modify lighters, making them an adult two-handed operation to ignite.

- Design a lighter that needs constant pressure to stay lit.

- Make maintaining the flame difficult for children to accomplish.

- Limit the amount of fuel available to the lighter to limit the burn time.

- Cover the flame with a protective shield or screen to prevent direct contact with the material to be ignited (thus, it would take patience to ignite object).
.
- Develop a non-flame lighter to be designed like a car lighter where the energy source would be a battery or electricity and the surface recessed to be used to light only such objects as cigarettes.

Upholstered Furniture

- Include flame retardant coverings on the undersurface (dust covering) of upholstered furniture items.

- Require that upholstered furniture covering fabric be resistant to small open flame ignitions such as those from matches and lighters.

- Require that cushioning materials of upholstered furniture be combustion-modified or that blockers be used to inhibit the extension of combustion to cushioning materials.

Mattresses

- Include flame-retardant coverings on undersurface (dust covering) of mattresses.

- Require that mattresses be resistant to small open-flame ignitions such as those from matches and lighters.

Bedding

- Make children's bedding flame-resistant (to correspond with regulations regarding children's sleep clothing).

- Perhaps expand this requirement to include all bedding materials (adults included).

Flame Retardants

- Explore possibility of making other objects such as curtains and upholstered furniture *flame retardant*, i.e., slow down the ignition or flame spread of these objects.

- Promote research on intumescent (swelling) materials that upon exposure to fire swells up to form a thick layer of insulating foam between the surface (the fuel) and the fire (the head). (This is presently being experimented on in upholstery, aviation materials and clothing for military uniforms.)

Fireworks

- Explore an enhanced fusing system that incorporates a two-step lighting process.

- Severely limit (or ban) the sale of fireworks in general (or to minors in specific) by laws in all states.

Candles

- Introduce short duration, self-extinguishing candles, which are constructed of several short wicks or one chemically altered wick that would require the candle to be re-lit after a period of time.

- Manufacture candles so that the wick does not extend to the bottom of the candle, thus becoming self-extinguishing.

- Redesign candleholders to be: 1) weighted at the bottom or have a wider bottom base to prevent tip-overs or 2) enclosed with tall sides.

Paper

- Explore the possibility of manufacturing fire-resistant cellulose products. NFIRS data suggests that paper products in the form of trash, magazines and cartons may be involved in as many as 20% of all children playing fires. While it is technically possible to make cellulose and cellulose products flame-resistant, it becomes an interesting problem in practice because of the wide variety of cellulose products in use. Nonetheless, the fire-resistant cellulose product is an enhancement that may be beneficial in reducing juvenile-set fires.

Flammable/Combustible Liquid "Fuel" Containers

- Require child-resistant caps or packaging for all containers of flammable/ combustible liquids.

Limiting Access to Matches and Lighters

- Control their placement in stores where they are often available free.

- Regulate their access to minors.

- Educate adults on danger of leaving ignition sources available to children through public safety messages and public awareness campaigns.

Warning Labels

- Attach warning labels directly on all the above items notifying users that the product has been involved in juvenile-set fires or is a potential fire hazard for children.

Protective Devices

- Continue to encourage individuals to check and maintain fire alarms, especially in bedrooms.

- Encourage installation of fire sprinklers in residential properties and promote tax and insurance premium rebates for having them installed.

Recognizing that not all will be feasible, cost-efficient or even desirable for implementation, the study team offers the above suggestions as fire safety changes worthy of serious future examination. The team concedes the problem of determining the effectiveness of an enhancement is one of the most difficult to assess. They themselves found in researching the existing enhancements to products that little data was available

in determining their effectiveness. This is also an area that is recommended for future study.

Summary

The product safety issues discussed in this report reflect the growing national concern about juvenile-set fires. The sheer numbers of fire incidents that involve juvenile fireplay indicate the need for a strategy to reduce the incidence of these fires, of which product enhancements and strategies can play a major role.

Industry on its own and with encouragement by the fire safety community has made great strides in implementing product enhancements to affect both the items that start fires and the items that are ignited. Continued pursuit of enhancements to these products will help reduce the numbers and severity of many juvenile-set fires.

The fires, however, will continue to be set as a result of the curiosity and determination of some juveniles. How to deter juvenile firesetters is a complex, national problem. The study team, in concluding its observations and recommendations, states, "A combination of safety enhancements, fire prevention education, supervision of children, limiting access to fire-starting materials, and operational fire detection (and suppression) equipment is needed to fully address the problem of juvenile firesetting."

LAW ENFORCEMENT

Fire and Police Aspects

Fire service and law enforcement personnel generally are the first to respond to most juvenile firesetter incidents. They are usually the first involved in investigating the scene, and the collected information has a distinct impact upon every subsequent response to the juvenile firesetting incident. In many jurisdictions, fire department investigators are peace officers, or have been grant the authority of bringing juvenile firesetters into the criminal justice system. For this reason, the role of the fire service as it relates to bringing these incidents into the criminal justice system is included in this section.

The expert team assembled by the State Fire Marshal's Office of the Washington State Patrol (WSP) analyzed and evaluated the law enforcement issues that directly affect juvenile firesetting. The team also undertook to provide a list of recommendations for improving investigatory and prosecutorial aspects of juvenile firesetting and an assessment of current trends and laws relating to firesetters.

The group began their study of the issues by accepting two premises: 1) that juvenile firesetters have an impact on the families and communities in which they live and, 2) the law enforcement and fire service professions must integrate their responses to firesetting incidents.

Prosecutorial Aspects

Many prosecutors have not had the opportunity to obtain any training on the issue of juvenile firesetting. In some localities, the information they do have is incomplete and dated. In addition, in many cases, law enforcement may not be aware of alternative dispositions that are available in lieu of prosecutions. The focus is on detention as a means of protecting the community, without considering other methods of addressing and successfully correcting the problem. In 1996, 53% of juvenile arson cases disposed by the courts were formally processed, 47% were disposed informally (Snyder, 1999).

Another approach by many in the community, including law enforcement services, is to take a "hands-off" approach, relying on the axiom that "kids will be kids." Firesetting will not disappear by itself and will increase if unchecked. It is imperative that a fire-risk assessment, followed by age appropriate and incident specific educational intervention be provided. It is equally important that effective and expeditious referral to one or more appropriate agencies is also instituted.

However, prosecution is not always the cure, nor is it always appropriate. Guidelines must be developed to assist in specifying the reasons for not bringing a charge. The importance of a collective agreement about how juvenile firesetters should

be treated cannot be overstated. It is clear that a national guideline is needed to assist the courts in handling the juvenile firesetter in cases where prosecution is not involved.

Improving Law enforcement Intervention Efforts

The lack of understanding concerning the seriousness of juvenile-set fires poses a threat to the effectiveness of any juvenile firesetter identification and intervention program. It is important for all agencies responsible for dealing with a child's welfare to understand the impact and motivations of firesetting actions — regardless of the size of the fire or the age of the child.

Intervention and follow-up of fire incidents need the participation of a number of agencies because no one agency has the ability to supply all the resources to effectively address and solve the problem. At the present time, different agencies involved with juvenile firesetters employ their own case management techniques. As a result, proper intervention is lacking because appropriate referral is not activated, and efforts are duplicated due to lack of communication. Investigators need to be more aware of the procedures of supporting agencies to better facilitate the movement of information and subsequent allocation of needed resources.

Law enforcement department practices vary greatly when it comes to responding to juvenile firesetting incidents. Some departments will not become involved when the juvenile perpetrator is under the age of eight unless there are implications of abuse or neglect. In dealing with juvenile firesetting, law enforcement is mainly concerned with issues of arson and how it relates to the juvenile court system. When children do not fall into this "criminal" category (but still need help in diverting their activities) they often do not get referred either to the fire department for intervention programs and fire risk analysis or to social service agencies for treatment.

When fire departments do receive referrals, sometimes they are unable to adequately respond. In most states, the majority of fire departments are entirely volunteer organizations. They may not have resources beyond what is necessary for suppression activities and have few, if any, personnel who can be trained and available during daytime hours to provide effective juvenile firesetter identification and intervention programs. These volunteer fire departments would benefit from a cooperative effort with other agencies. Resources problems, however, are not limited to volunteer departments. Career departments, which serve highly populated areas, often suffer from the same lack of funding and are faced with greater absolute numbers of juvenile firesetters.

School administrators and teachers are other important links in the community to the juvenile firesetters. However, school personnel often do not realize the importance of reporting fire incidents to the proper authorities. Education personnel should be included in the response process of helping juvenile firesetters because firesetting incidents often occur on school property. By failing to report what they consider to be minor nuisances,

school officials miss the opportunity to address firesetting behavior at its earliest appearance.

Small law enforcement jurisdictions also have a problem adequately dealing with the juvenile firesetter problem because of inadequate resources. Having access to models from other locations would help them in formulating and adapting case management procedures to their environments.

Need for Sharing of Information

It is imperative that the law enforcement community be trained to identify and address each instance of juvenile firesetting in an appropriate and effective manner. The education process includes access to pertinent data. Currently, many organizations collect data on juvenile firesetting incidents, but the sources are compartmentalized. Furthermore, these data sets are typically not comprehensive. For example, while 90% of police departments report to these systems, they cover just over half of the U.S. population (Hall, 1995). Retrieving data from many sources is often time-consuming and elusive. Some examples of the type of agencies collecting data on arson and juvenile firesetting incidents are found in the following chart:

VARIOUS COLLECTION AGENCIES	TYPES OF INFORMATION COLLECTED
National Fire Incident Reporting System (NFIRS)	Fires reported to the US Fire Administration by fire departments nationwide (includes causal data)
National Fire Protection Association (NFPA)	Fire reports collected by sampling of fire departments, supplemented by NFIRS data (includes causal data)
Uniform Crime Reporting System (UCR)	Standardized Crime Reports submitted to FBI by law enforcement agencies nationwide (includes arrest data)

Sharing and Confidentiality

While data from different sites is valuable, it is not always available. Child abuse information, related in some cases to juvenile firesetters, is collected by hospitals, schools, animal control officers, mental health services or other agencies. If data collectors cannot share this information with the people who have a clear need for access, the programs will be limited in their effectiveness and in their life span. In attempting to

share this information, the issues of dissemination and confidentiality are necessarily raised. Due to confidentiality rules and regulations maintained by various agencies collecting data, this information may not be available for use by other agencies.

Kansas and Wyoming have enacted legislation which facilitates inter-agency sharing of information, but obtaining background data from all sources in other states is extremely difficult at this time. A universal listing of agencies and individuals would facilitate availability of otherwise confidential information concerning juvenile firesetters. In developing this list, there is a need to address the confidentiality issue while at the same time evaluating and quantifying the harm that results from the lack of free exchange of information among all parties who have a legitimate need for the information.

Improving Data Collection

Data is currently being collected on juvenile firesetters by a variety of agencies within the juvenile delinquency control system. Information is recorded independently by such groups as law enforcement, fire service, child welfare workers, school administrators, juvenile and criminal courts, and mental health agencies. This data is: 1) created and maintained using an agency-specific vocabulary to describe conduct; 2) evaluated based on multifaceted public policies; and 3) infrequently shared with one or more other agencies, entities, or individuals according to confidentiality practices of each location.

To get a handle on juvenile firesetting data from the various collection agencies, a single repository needs to be established utilizing consistent terminology among different programs. A commonality of terms would help to determine what actually constitutes juvenile firesetting behavior and at what point an involved agency can determine there is a certain intent that necessitates charging a child with a crime of arson.

In addition to cataloguing this data, there is a need to examine the content of the information for its statistical value. This information could be useful in the identification of risk factors, risk assessments, performance measures, evaluations, linkage of data, causation vs. conduct, and recidivism.

Need for More Treatment Programs

Many juveniles become firesetters in response to being abused, neglected or exposed to severe family trauma. In some instances, understanding the trauma is essential to understanding the motivation behind the fire being started and thus essential to treating the firesetting behavior (K. Fineman, 1995).

Few model treatment programs are available nationwide to address the issue of firesetters who have been arrested or taken into custody for their firesetting behavior. There are various agencies in states, such as Child Protective Services, Family Advocacy,

and Department of Family Services who, in the course of their operations, deal with this issue. They are sometimes charged with the responsibility of intervention, but they receive little education as to the severity of the problem and how to intervene.

Law enforcement personnel may refer children and their caregivers to such services when they become aware that these children have been neglected and/or abused by their caregivers. In dealing with these referrals, however, these agencies may not be aware of the serious implications of firesetting behaviors. In most states, the missions of these agencies are basically to provide whatever is necessary to resolve the situation and keep the family together.

There is a need to compile and review a list of treatment programs enacted by legislation across the nation. Several programs were cited that could be adapted and used as national models for handling juvenile firesetters. The Rosenberg Law (Chapter 3b), enacted by legislation in the Commonwealth of Massachusetts, enabled one such treatment program. Only a small portion of the firesetting children are impacted by this law, but it does provide for quick mental health intervention for firesetters identified in a high-risk population.

Two other programs that deal with other youthful behavior issues could be used as models for designing similar programs dealing with juvenile firesetters. They are the Sex Offender Disposition Alternative (SODA) and Sexually Aggressive Youth (SAY) programs, both used in the State of Washington.

Improving Interaction of Agencies

A multidisciplinary approach is also necessary in determining how juvenile firesetting conduct should be evaluated. Each participant in the evaluation approaches the situation from a different perspective. For example:

- The fire investigator, as a law enforcement official, may see it as arson.

- The social work professional may observe the activity as a symptom/acting out of an abusive or dysfunctional environment.

- The mental health professional may consider the firesetting as a symptom of psychopathological conduct.

- The law enforcement officer, specializing in youth gangs, may view the conduct as strategic firesetting in the framework of gang involvement.

Obviously, firesetting can be characterized by more than one assessment. Motivation must be effectively and accurately defined to assign the proper identification and intervention programs before effective interaction can begin.

Implementing awareness training programs for agencies dealing with firesetting issues is hampered by two concerns. The first is the lack of a uniform vocabulary for technical terms to describe firesetting behavior. The second is the inability to share information due to confidentiality issues among agencies.

Summary

As a result of reviewing the investigatory and prosecutorial aspects of law enforcement and its current trends, the following next steps are suggested:

1. Programs

- Develop a strategic link with the Community Policing Consortium, an organization composed of the five leading police organizations in the United States, to gain support and insight with the law enforcement community in addressing the juvenile firesetting problem.

- Research and develop model alternative disposition programs for prosecutors who may be unaware of options other than prosecution.

- Alert law enforcement officials to treatment and intervention programs that effectively address firesetters and other juvenile delinquency issues and use them to shape model programs that efficiently treat juvenile firesetters.

2. Education

- Research and develop an awareness-training program targeted specifically at law enforcement and juvenile justice personnel. For example, the National Fire Academy, which currently delivers an arson prevention and control program that includes both juvenile firesetting and fire education modules, may be used as a model for training delivery.

- Design curriculum with certification programs for law enforcement using a coalition of individuals with related expertise in adult education, curriculum development, police/fire training, and juvenile development.

- Identify and develop model programs for training school administrators, school security officers, educators and other staff, focusing on juvenile firesetting in the school environment. For example, the National Fire Academy currently delivers an arson prevention and control program that includes both juvenile firesetting

and fire education modules that may be modified or enhanced for training delivery.

3. Standard Operating Procedures

- Include juvenile firesetter issues under standard operating procedures to be adopted by fire and law enforcement, school administrators and educators, mental health professionals, juvenile justice, child protective services and family advocacy, giving high priority to fires involving juveniles.

- Create a set of uniform standards that would assist prosecutors in determining the level of intent to justify charging a child with arson.

- Develop a common vocabulary that includes analyses of the proposed uses of defined terms. Several sources for coordinating a common vocabulary could be obtained from the educational programs developed by the National Fire Protection Association; University degree programs that blend curricula relating to juvenile issues; research programs that form the bases for curriculum development; and legislative responses based on the data and analysis of research facilities.

- Develop a service delivery model that provides law enforcement officers with a "tool box" to effectively manage juvenile firesetters.

4. Sharing of Information

- Promote legislation that addresses the confidentiality issue to allow for more interaction between agencies. Two models available for providing such authority are the Virginia "Serious or Habitual Offender Comprehensive Action Program" (SHOCAP) and the Wichita/Sedgwick County, Kansas "Interagency Gang Intervention Database Program."

- Create multi-state agreements, such as the Interstate Compact on Juveniles that would permit interstate sharing of information.

Conclusion

Any effective national model for the identification, intervention, and treatment of juvenile firesetters must include an accounting of sources and content of data being compiled on the local, state and federal levels; a cooperative effort among involved agencies; and an effective means of data communication for all relevant participants. This communication needs to be improved in the areas of creating a common vocabulary; coming to a national consensus on risk factors or risk assessment; and resolving confidentiality issues to expand the sharing of information to other relevant agencies besides designated law enforcement officers involved in investigating arsons.

COMMON FINDINGS OF THE REPORTS

The five teams commissioned by NASFM through its Justice Department grant have completed the first all-inclusive, in-depth study of juvenile firesetters in the United States. The examination of each of the seven areas identified as critical to this study (law, psychological/ sociological dimensions, home environment/social services, campaign messages and product safety) provided NASFM with a wealth of information. Some of this information had never before been gathered in conjunction with a view towards the broader picture of firesetting. Some research had never been conducted as a group study, but only as independent research.

Although each study group conducted its research independently, some common themes re-appeared throughout the reports. The first overall consensus was that there is a definite national need to identify and help re-direct children who experiment with fire. Whether they are the curiosity prone younger child or the troubled juvenile, they all need services tailored to address the cause of their particular harmful and, in some cases, dysfunctional behavior.

The conclusions of all reports indicate that there are five areas that must be addressed to effectively respond to the problem of juvenile firesetters in the United States. They are: increase perception and awareness of the problem; provide awareness training programs for professionals; encourage coordinated community efforts; enhance case management cooperation and processes; and address the issue of confidentiality of information.

Increase Perception and Awareness of Problem

Firesetting is not just a fire department issue — everyone in the community is impacted. The family, the fire department, law enforcement and the community suffer the consequences of the incident. Every study pointed out the need for increased public awareness to the growing problem of juvenile firesetting and the acknowledgment that it is a serious problem. Increased awareness will facilitate the implementation of improved procedures and treatment services for use by law enforcement and mental health providers. It will also force more effective fire safety education and demand improvements to products involved in firesetting.

The mental health professionals emphasized that an increased perception and awareness of the problem was needed so those juveniles in need of counseling would be referred for proper help. A media campaign and published articles were suggested as a way to increase the public's perception of the problem.

Provide Awareness Training Programs for Professionals

Findings by the different study teams demonstrated that very few professionals have received formal, recognized training in either the assessment or the treatment of

juvenile firesetting behavior — whether they be in fire service, law enforcement, mental health, schools, social services, or the courts. Many of these professionals indicated that they were amenable to attending training opportunities, if available.

The Mental Health Intervention study aptly pointed out that to develop a successful intervention for those juveniles who set fires requires an understanding of those factors that contribute to the behavior. NASFM has concluded from these reports that providing awareness training for professionals should be one of the first steps in setting up a program to confront the problem of juvenile firesetting.

Encourage Coordinated Community Efforts

Each team overwhelmingly came to the same conclusion that scattered, independent approaches to deterring juveniles who engage in fire activity will be unsuccessful. It was a consensus that only through a cooperative community effort will success be attained.

An interaction of concerned and affected agencies was deemed mandatory, with each agency sharing information, techniques and referrals. To be truly effective, this interaction must include parents, schools, medical groups, service agencies, community groups and private industry. The effects of juvenile firesetting extend well beyond the firesetters to include their families, fire and police departments, courts, property owners, and insurance companies who often have to pick up the bill.

In promoting this interaction of agencies, each report emphasized the need for agencies to share case management techniques to insure that all are treating the juvenile using the same descriptive words and with the most beneficial approach towards treatment. By knowing the availability of services in the region, the whole community can mobilize to provide the best service to the juvenile and family in need. Coordination is not only needed at the local level, but at the state level to prevent duplication of efforts and overlapping of services.

Enhance Case Management Cooperation and Processes

Lack of communication was most often mentioned as a hindrance to interaction between agencies. It was recognized that this lack of coordination often caused misdirected actions for specific cases, lack of proper referrals when needed and, worst of all, juveniles being released with no intervention at all. Often cited as a cause was the use of different vocabularies that are internal to the professional groups and various agencies.

The creation of joint standard operating procedures was suggested as a possible solution to the communication problem. Furthermore, an effort must be made to coordinate such tools as risk assessment analyses, evaluation forms, risk factor identification, and performance measures in an effort to identify and treat these juveniles.

Although each involved organization is now gathering, cataloguing and storing great quantities of information, the data is rarely, let alone systematically, shared. Consequently, the creation of some type of Clearinghouse was mentioned several times as a source of information and a means of tracking progress.

Address the Issue of Confidentiality of Information

Several reports indicated that collected information is not always shared because of confidentiality issues. The issue of confidentiality serves as a stumbling block to information sharing. Several reports determined that legislation may be needed before this lack of sharing information can be corrected. The Law Enforcement report specifically addressed this problem. As they reported, proper intervention and successful treatment are severely hampered when someone with a need to know can not get pertinent data upon which to act. Sharing information significantly helps in the research and analysis of intervention approaches and success rates of treatments.

The impact of the inability to share information is widespread. For example, law enforcement needs to be able to identify repeat firesetters to help the juvenile court system in dealing with youthful offenders on the proper level. In addition, without the release of some confidential information to the proper agencies, mental health agencies are unable to intervene or be called upon as a referral in cases where intervention would be the proper procedure.

Confidentiality issues also affect mandatory reporting, and where there is no mandatory reporting, no data is collected. This not only curtails research, but when programs are implemented to help solve a problem (sometimes making the best use of even incomplete data), it is impossible to quantify their effectiveness in relation to past performance and/or other attempts at solutions. Without adequate data, research and analysis of intervention approaches and success rates of treatment are incomplete.

NASFM feels that some attention must be paid to this problem of confidentiality. However, project members concur that the process of implementing a program to address the juvenile firesetter problem should not be hindered by this one concern. Efforts should be made concurrently to address the confidentiality issue while at the same time proceeding with concrete plans to improve the fire safety awareness of children who play with fire and the assessment of, intervention with, and rehabilitation of juveniles who intentionally set fires.

CONCLUSION

The findings of these reports leads NASFM to conclude that action must be taken to deter the effect of children playing with and intentionally setting fires. Juveniles who are criminally accused of arson must be re-directed in their intentions before they become adults and continue this behavior, thus becoming <u>adult</u> arson statistics. The cost in terms of hours spent by fire and police personnel, judges, prosecutors and defenders — not to mention the lives lost, injury costs and property damage incurred — must be contained.

As a result of this study, it is the consensus of the NASFM project team, and the Association as well, that a national effort must be undertaken to organize each state to address the problem of juvenile firesetters. It is felt that programs to address the needs of juvenile firesetters must be focused at the state level. It is the State that can most effectively coordinate and facilitate the activities of local and regional areas, as well as institutionalize the critical networks needed for success.

Initially, an organized effort must be undertaken to raise public awareness of the problem; educate professional intervention agencies to identify and effectively treat juvenile firesetters; set up model community programs that can be duplicated in each state; and train communities on how to implement and fund these programs to insure their perpetuity. To be successful, each community should take advantage of information from and work with existing organizations to enhance their programs.

After completing this research project and carefully studying its results, the National Association of State Fire Marshals recognizes that long term, effective programs to address juvenile firesetting require a focused state commitment which can bridge local impediments and coordinate regional services. The State Fire Marshal's office in each state is the natural entity to organize and manage this critical program since it serves already as the state focal point for fire safety and prevention in the 50 United States. It also has an established structure to effectively promote a juvenile firesetter intervention program for the expected duration.

The State Fire Marshal's Office (some states use varying titles to identify such offices) has the overall commission to reduce fires statewide and, in a majority of states, has the statutory responsibility to investigate all fires. In the performance of this mission, NASFM now interacts with every fire service in every state. It is the individual fire services throughout the country who are first on the scene of fire incidents. They are the first to record, identify and react to a situation. In the course of collecting this vital information, all local fire services currently interact with the Fire Marshals Office at all levels in each state.

In addition, States already look to the State Fire Marshals for training, education, technical assistance, hazard assistance, and code enforcement. NASFM is a natural choice to instruct the community on the hazards of children handling fire because of its many years of experience in public education. Under the NASFM "Challenge Program,"

the association educated disadvantaged families on the importance of smoke detection, resulting in the installation of 90,000 smoke detectors in 38 states across the Nation. NASFM is also involved in education campaigns on the dangers and safe use of various household products, including appliances, furniture and sleepwear.

Next Steps

NASFM, with the continued support of the Justice Department, will embark on a National Campaign to raise the awareness of the seriousness of juvenile firesetting. In addition, it will promote community cooperation to effect changes at the local level concerning the problem. To accomplish this, NASFM is prepared to conduct a national conference to bring this subject to the forefront of national concern; establish a Speakers Bureau to disseminate information across the nation regarding juvenile firesetter issues; and initiate up to four model programs in selected locations across the nation to serve as models for communities in controlling juvenile firesetting. Upon completion of establishing these models, NASFM is prepared to continue its help to communities by instructing them on how to establish programs modified for use in their particular jurisdictions and how to accomplish community support to insure their longevity and success.

Finally, the National Association of State Fire Marshals is grateful for the opportunity to have been able to accomplish this broad survey of an issue that, if left unattended, will have far reaching, negative effects on our communities for years to come. It is NASFM's commitment that the issue will not be left unattended, but that coordinated, widespread, effective juvenile intervention programs will be implemented across the nation.

EXPERT TEAMS

Psychological and Sociological Dimensions

Paul Schwartzman, Team Leader
Kenneth Fineman.
Pat Mieszala
Barbara Spurlin
Michael Baer
Carol Gross
Jeff Thomas
Michael Slavkin

Home Environment Dimensions and Social Service Resources

Robert Cole, Team Leader
Jerold Bills
Robert Crandell
Harriet Kitzman
Kenneth McConnochie
Sherri McKay
Lizette Peterson-Homer
Mark French
Mary Skvorak

Existing Intervention Programs

Pat Martin, Team Leader
Mickey Nall
Robert Mathias
Lucius Henderson
Aaron Abraham

Product Safety Enhancements

Patricia Frazier, Team Leader
James Hoebel
Howard Mell
Hollis Stambaugh
Kenneth Perkins
Marvin Thordsen

Law Enforcement Issues

Mary Corso, Team Leader
Mara Snyder, Co-Team Leader
Thomas Hinkle
Barbara Spurlin
Pat Mieszala
Michael Oler
Audry Fetters
Karen Jones

NATIONAL ASSOCIATION OF STATE FIRE MARSHALS

ARSON COMMITTEE'S

JUVENILE FIRESETTER INTERVENTION TASK FORCE

**Director Carolyn S. Kelly, State Fire Marshal of Wisconsin,
Chairperson**

State Fire Marshal Rocco Gabriele, Maryland

State Fire Marshal Daniel Carlson, South Dakota

Lt. James Bush, Deputy State Fire Marshal, Michigan

Sgt. Nick Saites, Deputy State Fire Marshal, Pennsylvania

Carol Pollack-Nelson, Ph.D., Human Factors Psychologist

Thomas E. Roche, Esq., former Juvenile Prosecutor

Ms. Barbara K. Gahagan, Manuscript Writer

Mr. Francis A. McGarry, NASFM Project Manager, Staff

References

Bumpass, E. R., Fagelman, F. D., & Brix, R. J. (1983). Intervention with children who set fires. American Journal of Psychotherapy, 37, 328-345.

Cole, R. E., Crandall, R., & Bills, J. (1999). Firefighter's Complete Juvenile Firesetter Handbook. Rochester, New York: Fireproof Children Company

Cole, R. E., Grolnick,W. S., Laurenitis, L. R., McAndrews, M. M., Matkoski, K. M., & Schwartzman, P. (1986). Children and Fire: Rochester Fire Related Youth Project Progress Report (2). Albany, New York: New York State Office of Fire Prevention and Control.

Cole, R. E., Grolnick,W. S., Laurenitis, L. R., McAndrews, M. M., Matkoski, K. M., & Schwartzman, P. (1986). Children and Fire: Rochester Fire Related Youth Project Progress Report (2). Albany, New York: New York State Office of Fire Prevention and Control.

Cole, R., Grolnick, W. & Schwartzman, P. (1999). Firesetting. In Ammerman, R., Hersen, M. & Last, C. (Eds). Prescriptive Treatment for Children and Adolescents (pp. 293-307). Boston: Allyn and Bacon.

Dryfoos, J. G. (1990). Adolescents at Risk. New York: Oxford University Press.

Fineman, Kenneth R. (1980). Firesetting in Childhood and Adolescence, Psychiatric Clinics of America, 3, 483-500.

Fineman, Kenneth R. (1995). American Journal of Forensic Psychology, Vol 13, No. 1.

Fire in the U.S., 9th Edition U.S. Federal Emergency Mgmt. Agency, U.S. Fire Admin.

Gaynor J. (1991). Firesetting. In M. Lewis (Ed.), Child and adolescent psychiatry: A comprehensive textbook (pp.591-603). Baltimore: Williams & Wilkins.

Gaynor, J., Hatcher, C. (1986). Firesetting - Our Burning Youth. The Psychology of Child Firesetting (pp. 5-92). New York: Brunner/Mazel

Grolnick, W., Cole, R., Laurenitis, L., Schwartzman, P. (1990). Playing with Fire: A Developmental Assessment of Children's Fire Understanding and Experience, Journal of Clinical Child Psychology, 19, 128-135.

Gruber, A. R., Heck, E. T. & Mintzer, E. (1981). Children Who Set Fires: Some Background and Behavioral Characteristics. American Journal of Orthopsychiatry, 51, 484-488.

References (Cont.)

Hall J. (1998). Children Playing with Fire: U.S. Experience 1980-1996. Quincy, MA: National Fire Protection Association

Hall J. R. (1998). Children Playing with Fire: U.S. Experience 1980-1996. Quincy, MA: National Fire Protection Association

Hall, J. R. (1995). The U.S. Arson Trends and Patterns - 1994, 57

Hall, J.R. (1999). The U.S.: Recent United States Arson Trends and Patterns, Hot Issues, 9, 6-7.

Jacobson, R. R. (1985). Child Firesetters: A Clinical Investigation. Journal of Child Psychiatry & Allied Disciplines, 26, 759-768.

Kolko, D. J., & Kazdin, A. E. (1990). Matchplay-Firesetting in Children: Relationships to Parent Marital and Family Dysfunction. Journal of Clinical Child Psychology, 19, 229-238.

Kolko, D. J., & Kazdin, A. E. (1985). Aggression and psychopathology in childhood firesetters: Parent and child reports. Journal of Consulting and Clinical Psychology, 53, 377-385

Kolko, D. J., & Kazdin, A. E. (1986a). A conceptualization of firesetting in children and adolescents. Journal of Abnormal Child Psychology, 14, 49-61.

Kolko, D. J., & Kazdin, A. E. (1991). Motives of childhood firesetters: Firesetting characteristics and psychological correlates. Journal of Child Psychology and Psychiatry, 32, 535-550.

Macht, L. B. & Mack, J. E. (1968). The Firesetter Syndrome. Psychiatry, 31, 277-288.

Naylis, Gerald J. (1999). Fire Engineering, 1/99, pp. 26-27

Operation Life Safety (1998). Most Americans Ignore Fire Alarms, "Operation Life Safety Newsletter," 13.

Peterson, L., Ewigman, B., Kivlahan, C. (1993). Judgments Regarding Appropriate Child Supervision to Prevent Injury: The role of Environmental Risk and Child Age, Child Development, 64, 934-950.

Piaget, J., Inhelder, B. (1969). The Psychology of the Child. New York: Basic Books, Inc.

References (Cont.)

Porth, D. (1999). The Portland Report 1998. A Report on the Juvenile Firesetting Problem.

Ritchey, K. & Janekowski, J. (1989). Problem-solving workshops for Families. Journal of Mental Health Counseling, 2, 307-324.

Rochester Fire Investigation Report (1988). Eyewitness account.

Showers, J. & Pickrell, E. P. (1985). Child Firesetters: Study of Three Populations. Hospital and Community Psychiatry, 38, 495-501.

Snyder, Howard N., Ph.D. (1999). OJJDP Fact Sheet, 2/99, #91, U.S. Department of Justice

Schwartzman, P., Stambaugh, H. & Kimball, J. (1994). Arson and juveniles: Responding to the violence. A review of teen firesetting and interventions (Federal Emergency Management Agency - United States Fire Administration). Emmitsburg, Maryland: United States Fire Administration.